INFORMATION SERIES

WATER PLANNING REPORT 3

Evaluation of Empirical Methods for Estimating Crop Water Consumptive Use for Selected Sites in Nevada

State of Nevada
Department of Conservation and Natural Resources
DIVISION OF WATER PLANNING

STATE OF NEVADA

DIVISION OF WATER PLANNING

EVALUATION OF EMPIRICAL METHODS FOR ESTIMATING CROP WATER CONSUMPTIVE USE FOR SELECTED SITES IN NEVADA

By

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January, 1980

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TO THE CITIZENS OF NEVADA:

This publication was prepared by Robert W. Pennington as a result of research he conducted in completion of his Master's Degree at the University of Nevada, Reno. Since the issue of evaluating various emperical methods to estimate crop water use is of great interest in Nevada, this agency is publishing this report to allow for greater dissemination than it would receive as a Master's Thesis.

The State of Nevada cannot attest to the accuracy of the data presented herein, and the conclusions are those of the author. However, every effort has been made to give this material critical review prior to publication. The Division of Water Planning would welcome any comments or suggestions on this material.

Information on the crop consumptive water requirement is an important component in the careful management of Nevada's water resources. We hope that efforts such as this publication will contribute to our basic understanding of crop water use and in turn support Nevada's vital agricultural industry.

Sincerely,

James P. Hawke

James P. Hawke, Administrator

ACKNOWLEDGEMENT

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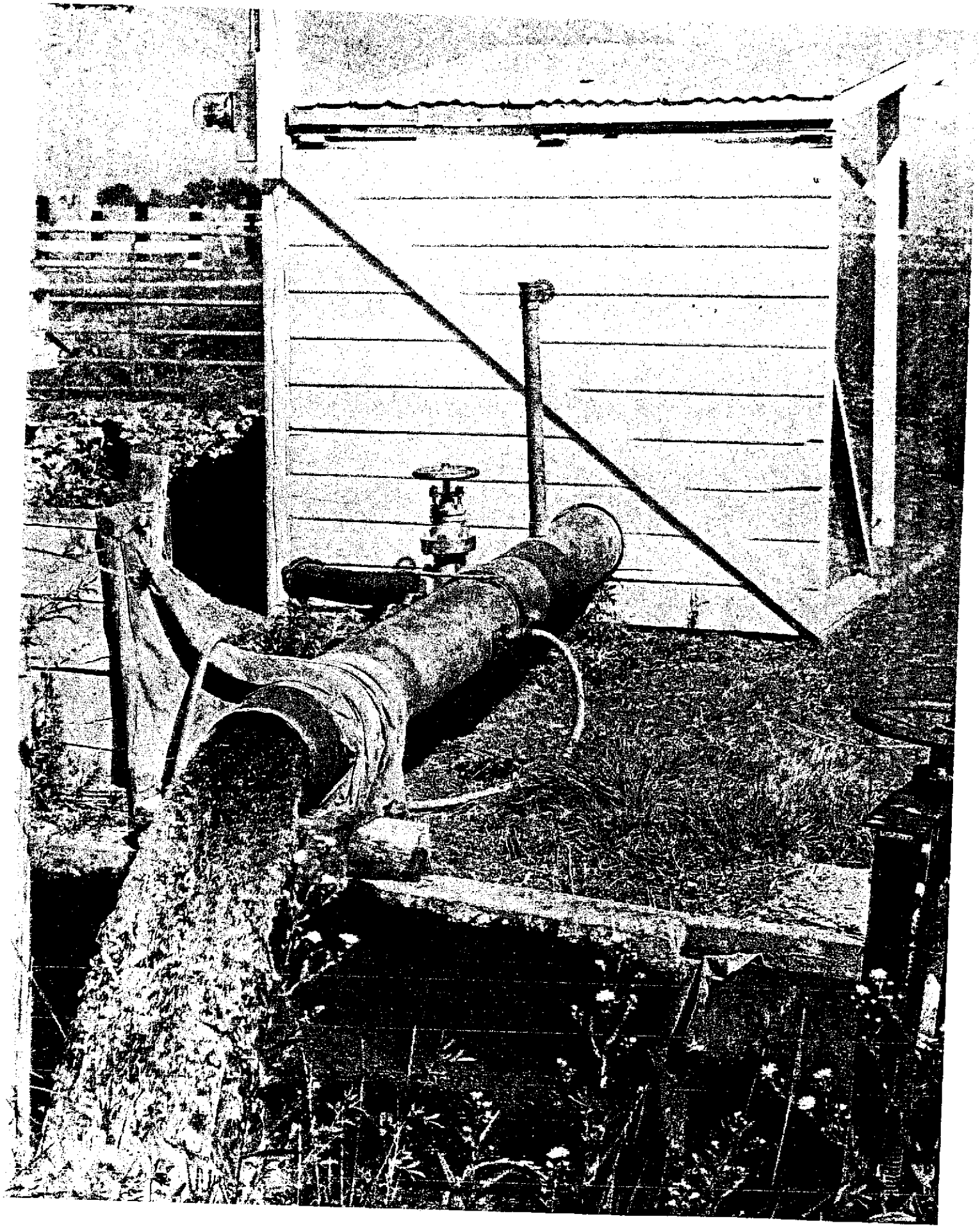
Some of the data used in this thesis were collected as part of Project 551 entitled Humboldt River Water Study jointly supported by the Pershing County Conservancy District, The Upper Humboldt River Water Users Association and the Nevada Agricultural Experiment Station.



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ABSTRACT

The need for more accurate and reliable methods to predict agricultural crop consumptive use became imperative as water became increasingly limiting in supply and availability. The primary objective of this research is to recommend the empirical methods that best approximate crop consumptive use in Nevada. Twelve evapotranspiration methods were evaluated in Carson Valley, Fernley, Fallon, Lovelock, Elko, Diamond Valley and Pahrump, Nevada. The standard methods are the original Blaney-Criddle, Hargreaves, Penman, Jensen-Haise and Pan Evaporation methods. The Technical Release-21 Blaney-Criddle method and the FAO Modified methods (Blaney-Criddle, Radiation, Penman and Pan Evaporation) comprise the second and third groups, respectively. A large variation in values occurs between methods and locations. Average annual values range from 26.04 inches for the Elko Technical Release-21 estimate to the Pahrump Standard Pan Evaporation estimate of 100.94 inches. Using crop coefficients derived from lysimeter data in Fallon, Nevada, the FAO Modified methods have shown to best approximate measured evapotranspiration and are recommended to predict agricultural consumptive use in Nevada.

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Chapter I

INTRODUCTION

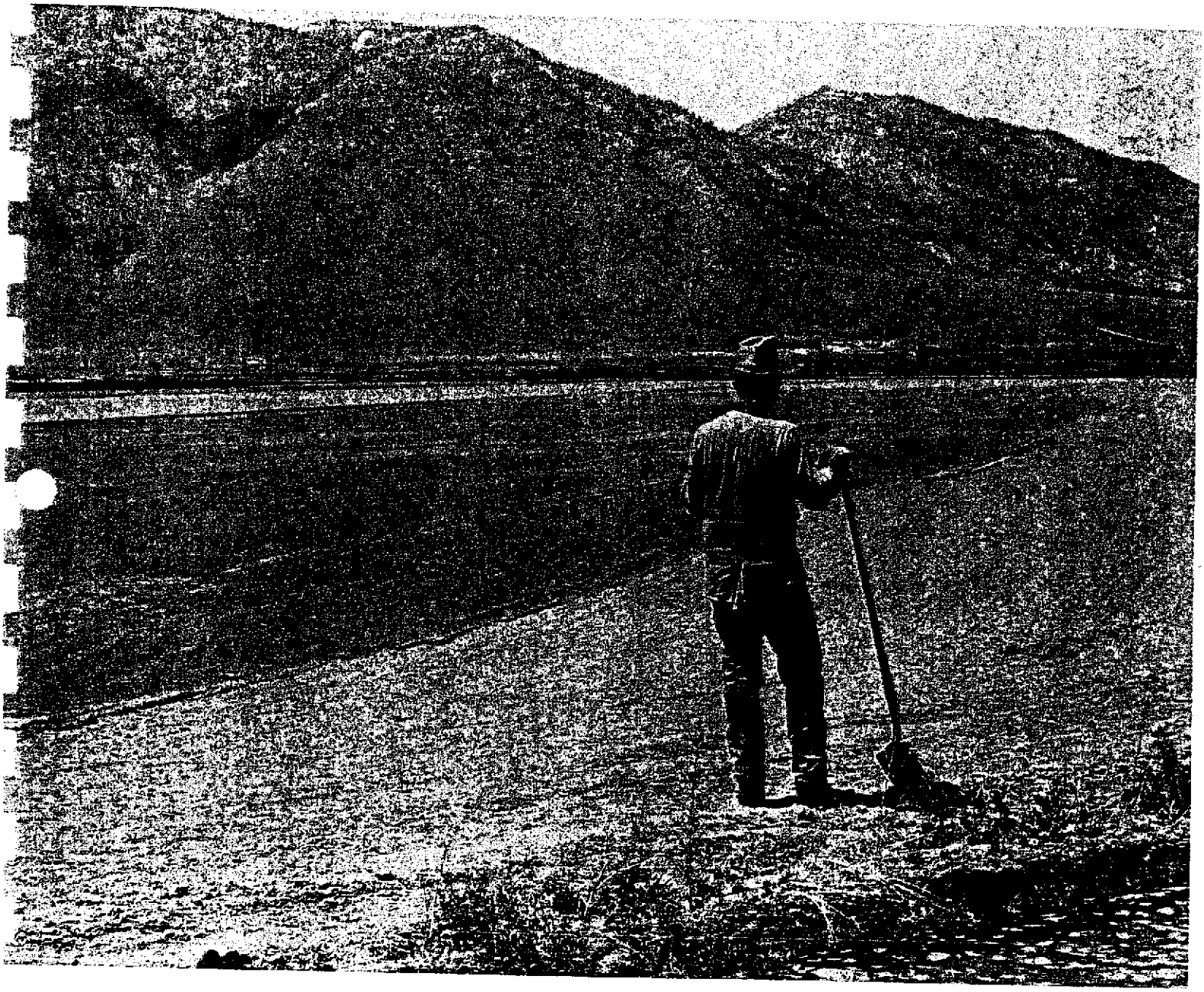


Photo by R. E. WALSTROM

Historical Irrigation Management: Traditional Concepts Passed Down From Generation to Generation

Chapter I

INTRODUCTION

In arid and semi-arid regions where the natural precipitation does not meet the evapotranspiration demands of commercial crops and ornamental plants, irrigation waters must be used to supplement the water supply. Both in the preparation of operating schedules on irrigation projects and in the design of canal systems, it is necessary to have a close approximation of monthly demands for irrigation (Hargreaves, 1956). As the population increases, greater competition for the water supply makes conservation and efficient use of water imperative (Erie, French and Harris, 1965).

Historically, irrigation application and scheduling has been based primarily upon experience and observations of the plant and the apparent moisture content of the soil. Beginning in the early nineteen hundreds and continuing to the present, empirical methods based upon meteorologic parameters have been used to predict the consumptive use of crops and subsequently the irrigation requirement.

Consumptive use or evapotranspiration, has been defined in many ways. One of the earlier definitions was given by the committee of the American Society of Civil Engineers in 1930.

> Consumptive use in a basic sense: The consumptive use 'U' is here defined as the quantity of water, in acre-feet per cropped acre per year, absorbed by a crop and transpired or used directly in the building of plant tissue, together with that evaporated from the crop producing land.

Consumptive use as introduced by John E. Field (while state engineer of Colorado) is

> The sum of volumes of water used by the vegetative growth of a given area in transpiration and building of plant tissue and that evaporated from adjacent soil, snow or intercepted precipitation on the area in any specified time, divided by the given area (Goodrich, 1956).

This definition has been found satisfactory for use since 1935 (Blaney, 1952). The latest definition of evapotranspiration or consumptive use given by Jensen, 1974 is:

> The quantity of water used in transpiration or building of plant tissue and that evaporated from the soil or from intercepted precipitation during a specific period of time. It is expressed as volume per unit area, or depth.

Evapotranspiration and consumptive use are synonymous and will be used interchangeably throughout this report.

Evapotranspiration represents the transport of water from the earth's surface back to the atmosphere--the reverse of precipitation--it assumes an important role in the hydrologic cycle and must be given careful consideration in assessing the water resources of a particular region (Hamon, 1961). Evapotranspiration is controlled by meteorological factors--radiation, wind, temperature and humidity along with soil moisture conditions and plant physiological factors (Hamon, 1961). There is, however, the tendency that a particular empirical method may not operate satisfactorily outside the climatic regime in which the original correlations were developed (McGuinness, 1972). Therefore, when using empirical methods based upon meteorologic parameters, care must be exercised when interpreting results and forming conclusions.

Previous studies illustrate the efforts made to arrive at consumptive use estimates to determine crop water requirements. Houston (1950) reported a crop water consumptive use estimate using the Blaney-Criddle method for various locations in Nevada. Computations were made for twenty-six regions depending upon the availability of temperature data. Consumptive use estimates were made only for the

so called "growing season" during the summer months. For example, this "growing season" in Lovelock, Reno and Fallon was estimated to be 128, 155 and 127 days respectively, and the resultant consumptive use for alfalfa was estimated to be 22, 23 and 22 inches. Houston (1955) later estimated consumptive use of an alfalfa forage test plot using soil moisture (gravimetric) sampling procedures. These measurements indicated a consumptive use estimate of 33.97 inches for the period May 9 to September 26, 1950, and 33.41 inches for the period April 12 to October 4, 1951. Corresponding alfalfa yields for the same periods were 7.00 and 6.00 tons per acre. Lysimeter studies conducted by Houston indicated the consumptive use of alfalfa to be 33.00, 40.00 and 44.00 inches for 1951, 1952 and 1953 respectively, with corresponding yields of 2.50, 4.00 and 4.90 tons per acre. Consumptive use of alfalfa-grass pasture for 1951, 1952 and 1953 were 35.00, 42.00 and 50.00 inches respectively with corresponding yields of 4.50, 6.10 and 7.10 tons per acre.

McCormick and Myers (1958) studied forage crops grown under high fluctuating water table conditions in Fallon, Nevada. The study was designed to obtain information concerning depth and frequency of irrigations. Various soil and water table conditions found in the Fallon area were also studied. Total application depths for the period April 4 to September 26, 1956, varied from 33.55 inches for alfalfa, to 46.37 inches for clover. For the same period in 1957 the application totals ranged from 35.44 inches for Alta Fescue to 48.90 inches for clover. Alfalfa, Alta Fescue and clover yields for 1957 were 9.56, 1.23 and 2.18 tons per acre, respectively.

Tovey (1963) studied weekly consumptive use and yields of alfalfa with different soil types and static water table levels in the Truckee Meadows during 1959, 1960 and 1961. Consumptive use estimates of a three-season (approximately May 15 to September 15) average ranged from 31.20 to 42.00 inches per season according to treatment. Corresponding yields ranged from 6.20 to 8.90 tons per acre. Average Class A pan evaporation for the three seasons was 35.77 inches over this period of time (May 15 to September 15).

Dylla (1964) estimated the evapotranspiration of native meadow grasses using lysimeters at the Winnemucca, Nevada experiment station. Water added was measured weekly for the period of May 1 to October 15 for two seasons. In the 1962 season, the water table was kept at a constant four-foot level. The average consumptive use estimates for the six ET tanks (lysimeters) was 19.57 inches with corresponding Class A pan evaporation of 52.30 inches. During the 1963 season, the lysimeters were managed to simulate seasonal wet meadow conditions as observed in the adjacent meadow during the 1962 season. The average consumptive use for the same period in 1963 was 22.58 inches with corresponding Class A pan evaporation of 47.10 inches. Dylla (1972) later showed with improved lysimeters that consumptive use for native grasses in 1967, 1968 and 1969 were 24.99, 26.00 and 23.70 inches respectively for an approximate season of May 1 to October 30. Average Class A pan evaporation for the same period was 53.19 inches. Average grass hay yields ranged from 0.96 to 1.87 tons per acre in 1968 and 0.64 to 2.03 tons per acre in 1969.

Guitjens and Mahannah (1972, 1973 and 1974) studied water management using irrigation applications, changes in soil moisture,

lysimeters and climatological data from five weather stations for the Newlands Irrigation Project in Fallon, Nevada. An average annual crop water use for alfalfa and pasture using soil moisture (neutron probe) and precipitation data was 42.80 inches for 1971 and 49.90 inches for 1972. Annual (water year) Class A pan evaporation for 1971 was 61.10 inches and 66.40 inches for 1972. Average yields for the Newlands Project field sites in 1971 were 5.36 tons per acre and 5.38 tons per acre for 1972.

Speck and Gifford (1973) used data from five weather stations located as a meteorological network, to estimate crop water consumptive use by various methodologies. Eight methods consisting of Thornthwaite, Olivier, Penman, Caprio, Blaney-Criddle, Hargreaves, Jensen and Turk were evaluated for the 1971 climatological year. Potential evapotranspiration estimates were 29.09, 58.64, 42.20, 43.77, 69.65, 63.30 and 45.29 inches for the Newlands Field Laboratory (climatological year 1971) for the Thornthwaite, Olivier, Caprio, Blaney-Criddle, Hargreaves, Jensen and Turk methods, respectively. Missing data prevented the yearly calculation of the Penman method.

Greil (1974) considered two time periods using three non-weighing lysimeters in an evaluation of so called "non-growing season" or "winter" alfalfa consumptive use. The longer period was from September 20, 1972, to May 20, 1973, and the shorter period was from October 1, 1972, to May 15, 1973. Evapotranspiration estimates ranged from 9.50 to 14.00 inches and 10.20 to 10.90 inches respectively for the two periods. Corresponding Class A pan evaporation for these respective periods was 26.10 and 23.00 inches.

Tuteur (1976) used three non-weighing lysimeters and climatological data in Fallon, Nevada, to estimate measured and potential alfalfa evapotranspiration for 1973 and 1974. Measured evapotranspiration ranged from 38.90 and 59.30 inches for 1973 and 1974. Due to poor infiltration in lysimeter A, an extensive leaching program was initiated in the spring of 1974. The program involved soil treatments of calcium chloride ($CaCl_2$) and calcium sulfate ($CaSO_4$), and a modified irrigation schedule. To prevent uptake of the subsurface injected calcium chloride, a high soil moisture content (near field capacity) was maintained in the overlying soil. Improved infiltration and drainage was a result of this leaching regime. Higher measured evapotranspiration (59.3 inches) and alfalfa yield (10.05 T/A) for lysimeter A was a result of the increased infiltration, drainage and soil moisture. However, Class A pan evaporation was also high (72.60 inches in 1973 and 76.90 inches in 1974). Potential evapotranspiration estimates ranged from 43.91 to 72.60 inches per year. Corresponding yields from lysimeters A, B and C for 1973 were 5.36, 6.56 and 5.98 tons per acre. In 1974, yields were 10.05, 7.67 and 9.44 tons per acre for lysimeters A, B and C respectively.

Jerrems (1976) conducted an irrigation and meteorologic study for use in estimating forage and turf water requirements for the Pahrump Valley. Computations of potential evapotranspiration by the standard Blaney-Criddle, Hargreaves, Jensen-Haise, Penman, Olivier and Pan Evaporation methods resulted in an average of 64.00, 84.00, 84.50, 85.00, 57.50 and 111.00 inches, respectively, for 1974 and 1975.

Guitjens and Mahannah (1976) in a study of the Upper Carson River, reported annual potential evapotranspiration estimates from 30.00 inches in 1975 by the Olivier method to 59.00 inches for the

Hargreaves Adjusted method (three year average). A four year average of annual Class A pan evaporation for this area was 61.50 inches.

Neyshabouri (1976) continued the lysimeter research during 1975 in Fallon, Nevada. Measured annual alfalfa evapotranspiration for lysimeters A, B and C were 49.50, 45.40 and 48.00 inches, respectively. Annual potential evapotranspiration ranged from 55.00 to 84.50 inches, respectively, for Olivier and Hargreaves Adjusted methods. Annual Class A pan evaporation for 1975 was 68.30 inches. Corresponding alfalfa yields from lysimeters A, B and C were 9.60, 9.80 and 10.30 tons per acre.

Wilcox (1977) continued the lysimeter studies in Fallon, Nevada. He used limited water applications for irrigation. Lysimeters A, B and C received an annual irrigation application of 24.50, 61.25 and 36.50 inches, respectively. Measured annual alfalfa evapotranspiration was 36.00 inches for lysimeter A, 42.13 inches for lysimeter B and 41.85 inches for lysimeter C. Annual Class A pan evaporation for 1976 was 70.45 inches. Annual potential evapotranspiration estimates ranged from 55.46 inches for Blaney-Criddle to 79.93 inches for Hargreaves Adjusted method. Corresponding yields for lysimeters A, B and C were 5.33, 5.93 and 6.26 tons per acre. Precipitation in the form of hail destroyed the third crop, hence the reduction in yields and the reduced variance between treatments.

Staubitz (1978) continued the lysimeter studies using limited irrigation applications in Fallon, Nevada for alfalfa. The lysimeters were irrigated with approximately equal amounts (replenishing consumptive use) until the allocated amount of irrigation water was met. Lysimeters A and C completed the remainder of the season without

irrigation water, simulating a drought period. Lysimeters A, B and C received 22.17, 37.40 and 30.48 inches of net irrigation water (irrigation application-drainage), respectively. Measured evapotranspiration (annual) in lysimeter A was 31.12 inches, 45.95 inches for lysimeter B, and 40.65 inches for lysimeter C. Assuming lysimeter B represented the crop water requirement (lysimeter B was managed for maximum production, and unrestricted irrigation water), evapotranspiration and corresponding yield deficits for lysimeter A and C were reported. Also an attempt was made to delineate the growing season. Results showed that growth begins April 1 and ceases October 1. Corresponding yields for lysimeters A, B and C were 6.82, 9.90 and 8.66 tons per acre.

It is apparent from the preceding discussion that certain considerations and limitations must be kept in mind when working with empirical methods. Some of these as outlined by Christiansen are as follows:

--Only data of the kind that are readily available to the user should be required for application of the procedure and only such data should be used in the development of formulas.

--The procedure should utilize all of the available climatic parameters that are found to significantly affect evaporation or evapotranspiration, but should permit use of more limited data.

--The procedure should require a minimum of personal judgment on the part of the user.

--The formulas developed should be dimensionally sound and should be applicable in either English or Metric units.

--The formulas should, insofar as possible, provide the practicing engineer with a working tool that would give reliable results when applied to climatic data from any part of the world.

Commonly used methods that are presented in this evaluation are:

Blaney-Criddle (original)
Jensen-Haise
Penman
Hargreaves
Pan Evaporation.

Each of these methods has been developed and used to predict evapotranspiration with varying climatological requirements, but in fact predict with differing accuracy per climatological site.

The Soil Conservation Service, USDA, has adopted a modified Blaney-Criddle method which is used for estimating peak crop water requirements for the design of irrigation systems. It is known as the SCS Technical Release-21 Blaney-Criddle method. This method will also be evaluated in Nevada and will be referred to as "Technical Release-21" throughout this report.

The Food and Agricultural Organization (FAO) has modified some of the various empirical methods to fit actual measured values as reported for evapotranspiration investigations throughout the world. In many ways they are similar, but the FAO has made additional modifications to correct for differences in day and night weather conditions (wind, humidity, solar radiation, etc.). The FAO methods are:

Modified Blaney-Criddle
Radiation
Penman
Corrected Penman
Pan Evaporation.

OBJECTIVES

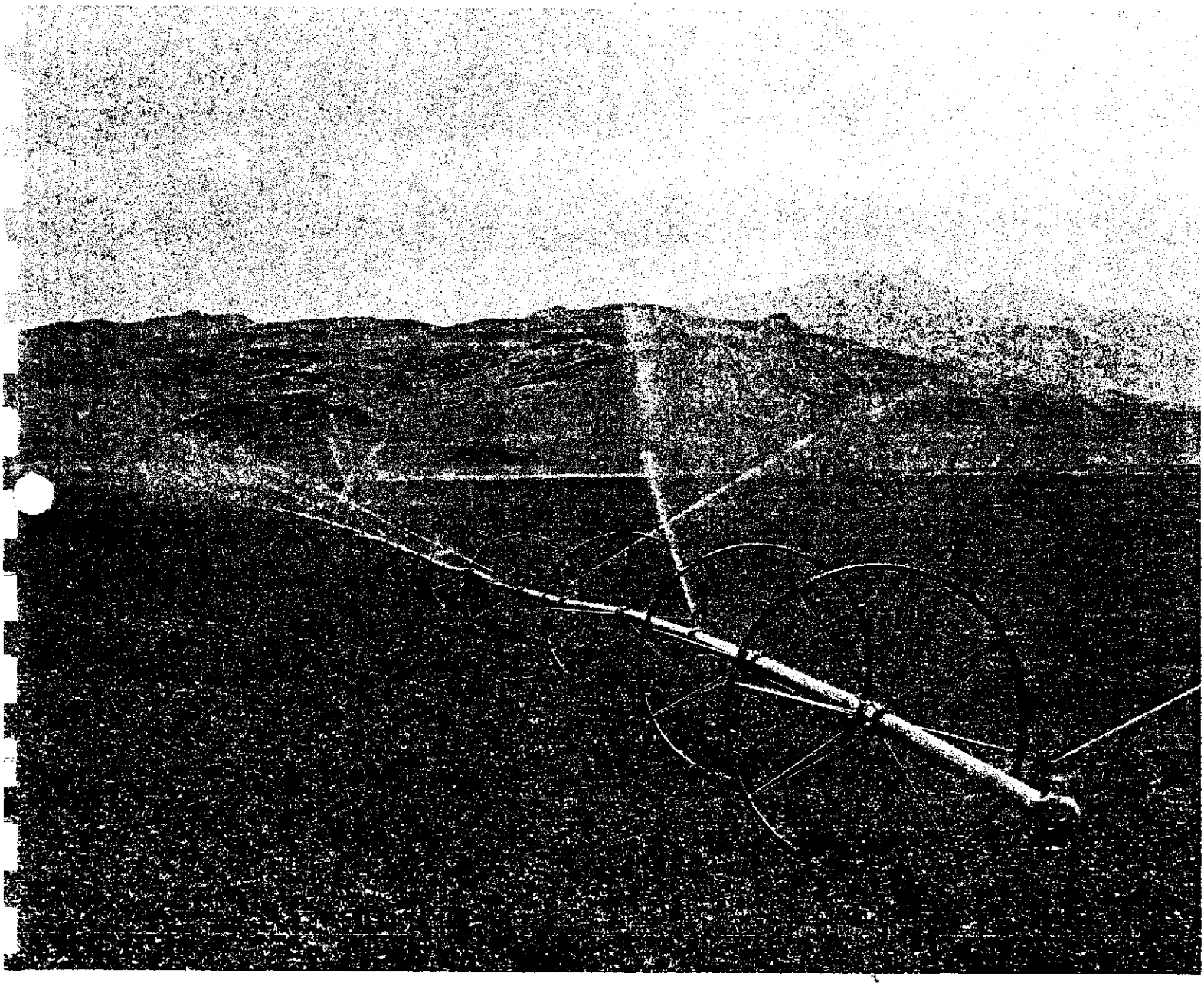
1) To evaluate the FAO Modified methods for selected Nevada locations.

2) To compare the FAO Modified methods with the previously adopted methods (Standard, Technical Release-21).

3) To make recommendations for future use of the Standard, Technical Release-21 or FAO Modified methods in Nevada.

Chapter II

METHODS AND MATERIALS



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Better Water Use Efficiency Through Modern Technology

Chapter II

METHODS AND MATERIALS

Field Data

Table 1 lists the study site locations (elevation and latitude) and periods of data collection. The Carson Valley area is represented by three weather stations located on the Sarman, Witt and Heritage ranches. The Lovelock Valley data are based upon two stations, the Upper Valley or Ruddle ranch and the Lower Valley or Carpenter ranch. The data from the five remaining stations are based upon one weather station each. Each weather station was equipped to measure the following:

-Temperature
maximum, minimum thermometers in degrees Celsius (°C)
Centigrade

-Continuous Temperature (°C) and Relative Humidity (%)
Weather Measure hygrothermograph model H311

-Wind speed (miles)
Weather Measure anemometer model W164 B/E

-Solar radiation (langleys)
Belfort pyrheliometer model 5-3850 A

-Precipitation (inches)
Weather Measure general purpose rain gage eight inch forester type model P569

-Pan evaporation (inches)
USWB Class A evaporation pan

All data were collected on a weekly basis. Means are values planimetered from continuously recorded charts. Missing data were estimated by using airport data from similar climatic regions or from neighboring stations where duplication of input parameters was feasible.

TABLE 1. SUMMARY OF LOCATIONS, ALTITUDE, LATITUDE AND PERIODS OF DATA COLLECTION

Location	Data Period					Altitude (meters)	Latitude (decimal)
	1973	1974	1975	1976	1977		
Carson Valley		X	X	X		1440.33[1]	38.9[1]
Fernley	X	X	X			1219.00	39.9
Fallon		X	X	X	X	1207.00	39.5
Lovelock				X	X	1219.00[2]	40.0[2]
Elko				X	X	1676.00	41.0
Diamond Valley				X	X	1829.00	40.0
Pahrump		X	X	X	X	792.40	36.0

[1] Average of Sarman, Witt and Heritage values
[2] Average of Carpenter and Ruddle values

Theory

Calculation of evapotranspiration by empirical equations is limited to the availability of required input data, the accuracy desired and the ease of application. The methods evaluated in this report are grouped into three categories: Standard, Technical Release-21 and the FAO Modified methods.

Standard Methods

The methods listed are the original equations and are applied to the Carson Valley, Fallon, Lovelock, Elko, Diamond Valley and Pahrump Valley. Calculation of these methods were made using computer programs previously developed for use in Nevada.

Blaney-Criddle (Blaney and Criddle, 1952)

$$U = KF \quad [1]$$

where: U = the consumptive use of water in inches
K = empirical seasonal coefficient
F = the sum of monthly factors (f) for the season, where

$$f = \frac{p \times T}{100} \quad [2]$$

P = monthly percentage of annual daylight hours
T = mean monthly air temperature (°F)

Jensen-Haise (Jensen, 1974)

$$PET = C_T (T - T_X) R_s \quad [3]$$

where: PET = potential evapotranspiration (inches)
C_T = air temperature coefficient, where

$$C_T = \frac{1}{C_1 + 13C_H} \quad [4]$$

and: $$C_1 = \frac{68 - 3.6E}{1000} \quad [5]$$

and: $$C_H = \frac{50}{e_2 - e_1} \quad [6]$$

E = site elevation (feet)
e_2= saturation vapor pressure in millibars at mean maximum temperature for the warmest month of the year
e_1= saturation vapor pressure in millibars at mean minimum temperature for the warmest month of the year
T = mean air temperature for the period considered (°F)
T_x= intercept of the temperature axis, where

$$T_x = (27.5) - (.25)(e_2 - e_1) - \frac{E}{1000} \quad [7]$$

R_s= mean solar radiation expressed in equivalent inches of evaporation

Hargreaves (Hargreaves, 1966)

$$E_t = KE_p \quad [8]$$

where: E_t= weekly consumptive use (inches)
K = crop coefficient
E_p= estimation of pan evaporation, where

$$E_p = 0.38d[1 - 0.01H_n][T - 32] \quad [9]$$

when: d = weekly daytime coefficient
H_n= relative humidity at noon (%)
T = mean weekly temperature (°F)

Hargreaves Adjusted (Hargreaves, 1966)

$$E = CE_t \quad [10]$$

where: E_t= consumptive use (inches)
C = adjustment factor to account for the effects of wind speed (f_w), sunshine (f_s) and elevation (f_e), where C is defined as

$$C = (f_w)(f_s)(f_e) \quad [11]$$

Penman (Jensen, 1974)

$$E_{tg} = \frac{\Delta}{\Delta+\gamma}(R_n + G) + \frac{\gamma}{\Delta+\gamma}15.36(1 + .0062u_2)(e_z^* - e_z) \quad [12]$$

where: E_{tg} = potential evapotranspiration for alfalfa
Δ = slope of the saturation vapor pressure temperature curve
γ = psychrometric constant
R_n = net radiation

and: $$\frac{\gamma}{\Delta+\gamma} = 1 - \frac{\Delta}{\Delta+\gamma} \quad [13]$$

u_2 = wind speed at two meters in km per day
e_z^o = saturation vapor pressure (mb)
e_z = water vapor pressure (mb)
G = heat flux density from ground (cal cm^{-2} day^{-1})

Pan Evaporation (Jensen, 1974)

$$E_{tp} = C_{et} \times E_{pan} \quad [14]$$

where: E_{tp} = evapotranspiration rate from a well watered alfalfa reference crop
C_{et} = evaporation pan coefficient
E_{pan} = evaporation from a Class A pan

Technical-Release-21 Method

The Soil Conservation Service has developed a method using the original Blaney-Criddle formula with modifications in the empirical crop coefficient (K). These refinements were a breakdown of the crop coefficient (K) into a temperature related coefficient (k_t) and a crop growth stage coefficient (k_c) developed from research data. The equation is:

Technical Release-21 Blaney-Criddle (SCS TR 21, Rev. Sept., 1970)

$$U = \Sigma u = KF \quad [15]$$

where: $$u = kf \quad [16]$$

U = consumptive use of the crop for the growing season (in)
K = empirical crop coefficient

and: $$K = k_t \times k_c \quad [17]$$

k_t = climatic coefficient related to mean air temperature (T)

or: $$k_t = .0173T - .314 \quad [18]$$

k_c = crop growth stage coefficient
F = sum of monthly factors (f) for the season

where: $$f = \frac{p \times T}{100} \quad [19]$$

T = mean monthly air temperature (°F)
p = monthly percentage of annual daylight hours

The Technical Release-21 method was calculated by incorporating it into the computer program that estimates the FAO modified methods. Care was taken to keep Technical Release-21 and the FAO modified methods independent of each other while using the same input data.

Food and Agricultural Organization (FAO) Methods

The Food and Agricultural Organization (FAO) during meetings held in Lebanon (1971) and Rome (1972) has developed guidelines for estimating crop water requirements using modified methods. The methods calculate reference crop evapotranspiration (ET_o) which is:

> The rate of evapotranspiration from an extensive surface of 8 to 15 centimeters tall, green grass cover of uniform height, actively growing, completely shading the ground and not short of water.

ET_o is expressed in millimeters per day and is the mean value over the period considered (Doorenbos and Pruitt, 1977). The FAO modified methods are:

Blaney-Criddle (Doorenbos and Pruitt, 1977)

$$ET_o = c[p(0.46T + 8)] \quad [20]$$

where: ET_o = reference crop evapotranspiration in millimeters per day for the month
T = mean daily temperature (°C) over the month
p = mean daily percentage of total annual daytime hours
c = adjustment factor dependent on minimum relative humidity, sunshine hours and daytime wind

Radiation (Doorenbos and Pruitt, 1977)

$$ET_o = c(w \times R_s) \quad [21]$$

where: ET_o = reference crop evapotranspiration for the period considered
R_s = solar radiation in equivalent evaporation (mm day^{-1})
w = weighting factor
c = adjustment factor dependent on mean relative humidity and daytime wind

Penman (Doorenbos and Pruitt, 1977)

$$ET_o = c[w \times R_n + (1-w) \times f(u) \times (ea - ed)] \quad [22]$$

where: ET_o = reference crop evapotranspiration in mm per day
w = temperature related weighting factor
R_n = net radiation in equivalent evaporation in mm per day
f(u) = wind related function
(ea - ed) = difference between saturated vapor pressure at mean air temperature (ea) and the mean actual vapor pressure of the air (ed) in mb.
c = adjustment factor to compensate for the effect of day and night weather conditions

In the Penman method, c = 1.00, however, in the Corrected Penman method, the adjustment factor (c) is calculated using relationships incorporated into the computer program and then equation [22] is used.

Pan Evaporation (Doorenbos and Pruitt, 1977)

$$ET_o = Kp \times EPAN \quad [23]$$

where: ET_o = reference crop evapotranspiration in millimeters per day
EPAN = Class A pan evaporation in millimeters per day and represents the mean daily value of the period considered
Kp = pan coefficient dependent on mean relative humidity, wind, case (A or B) and distance of upwind fetch

Figure 1 shows the conditions described by case A or B needed for determination of the Pan Evaporation method.

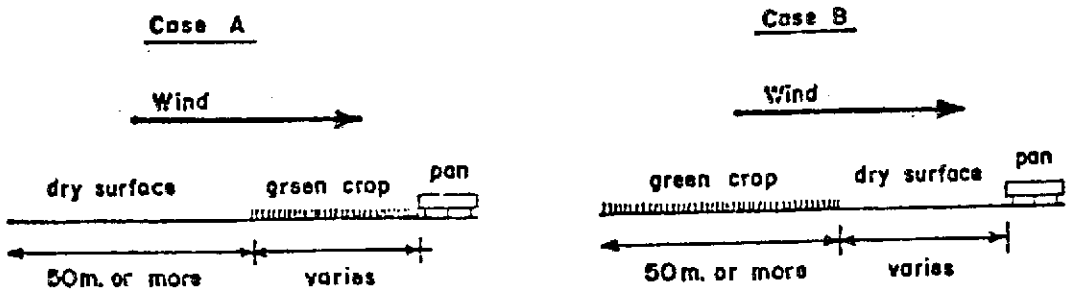

Figure 1. DIAGRAM FOR DETERMINING CASE AND UPWIND FETCH FOR THE PAN EVAPORATION METHOD

Calculations

FAO Computer Program

A primary concern of this report is to evaluate the FAO modified methods in Nevada. All calculations were made with a computer program which was modified for this purpose. A computer program deck was received from W. O. Pruitt, Irrigation Engineer, University of California, Davis. The deck was a duplication of the program listing in Appendix III of the FAO Irrigation and Drainage Paper 24, 1977. Major modifications were needed to adapt the program to the University of Nevada Computer System (CDC 6400). The modifications necessary were:

1) Correction of Fortran language discrepancies

2) Restructuring of four dimensional arrays into three dimensional arrays

3) Integration of the Technical Release-21 method

4) Output format changes.

The program calculates reference crop evapotranspiration (ET_o) and will accept data regardless of units. It converts the data to metric units, calculates the needed means and other data required to estimate (ET_o) by all or any of the FAO modified methods. A complete listing of the computer program is in Appendix C. Adjustment of reference crop evapotranspiration (ET_o) to alfalfa evapotranspiration (ET_{crop}) is accomplished by using a crop coefficient (kc and the relationship:

$$ET_{crop} = kc \times ET_o \qquad [24]$$

Crop Coefficients

Table 2 through Table 6 list the actual or lysimeter evapotranspiration, the reference crop (ET_o) values and the corresponding monthly and annual crop coefficients (kc) developed for each of the FAO modified methods. Data from lysimeters managed for maximum production in Fallon, Nevada, for four years were used for the measured or actual evapotranspiration. Climatological data from the lysimeter weather station were used to obtain the ET_o values. The monthly crop coefficients are a result of the ratio of actual evapotranspiration to Reference Crop (ET_o) evapotranspiration.

or:
$$kc = \frac{ET_{actual}}{ET_o} \qquad [25]$$

The coefficients (kc) were then averaged over the four years resulting in an average coefficient (AVE kc) which is applied to each location to calculate alfalfa evapotranspiration (ET_{crop}) using equation [24]. Annual crop coefficient (kc) values are the ratio of annual actual evapotranspiration to annual Reference Crop (ET_o) values.

TABLE 2. FAO CROP COEFFICIENTS (kc) FOR MODIFIED BLANEY CRIDDLE METHOD WITH ACTUAL[1] AND ESTIMATED[2] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LABORATORY

Month	1974			1975			1976[3]			1977			AVE (kc)
	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	
Jan	-0.16	0.86	-0.19	-0.03	0.69	-0.04	0.05	0.65	0.08	0.52	0.13	4.00	(0.11)[4]
Feb	0.02	1.91	0.01	0.04	1.25	0.03	0.44	1.62	0.27	0.35	1.85	0.19	0.13
Mar	1.54	4.11	0.37	1.03	2.66	0.39	0.86	3.08	0.28	0.07	3.19	0.02	0.27
Apr	5.32	5.72	0.93	2.80	3.61	0.78	1.55	4.68	0.33	3.66	6.18	0.59	0.66
May	8.87	8.05	1.10	8.33	6.33	1.32	8.26	7.82	1.06	6.28	5.68	1.11	1.15
Jun	11.19	9.18	1.22	8.11	8.19	0.99	6.91	8.28	0.83	5.63	8.45	0.67	0.93
Jul	12.04	8.75	1.38	8.87	9.25	0.96	9.41	8.45	1.11	8.36	9.34	0.90	1.09
Aug	8.96	7.23	1.24	9.10	7.52	1.21	4.97	7.60	0.66	7.40	6.92	1.07	1.05
Sep	7.21	5.01	1.44	6.69	5.72	1.17	6.11	4.72	1.29	6.54	5.00	1.31	1.30
Oct	2.88	3.09	0.93	3.41	3.33	1.02	2.90	3.10	0.94	3.81	2.93	1.30	1.05
Nov	1.16	1.34	0.87	0.30	1.51	0.20	0.86	0.92	0.93	1.38	1.08	1.28	0.82
Dec	0.24	0.37	0.65	0.57	0.33	1.73	-0.27	-0.03	9.00	1.04	0.73	1.42	(0.34)[4]
Total	59.27	55.62	1.07	49.22	50.39	0.98	42.06	50.89	0.83	45.04	51.48	0.87	0.94

[1]Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur,1976, Neyshabouri,1976, Wilcox,1978, Staubitz,1978)

[2]Reference crop evapotranspiration (ET_o)

[3]Due to a hailstorm in August, the third crop was lost, effecting the actual ET values for 1976 (Wilcox)

[4]Figure in paranthesis are estimated values (Doorenbos and Pruitt,1977)

NOTE: Annual kc values are the ratio of annual actual ET to annual ET_o values, $kc = ET_{actual}/ET_o$

TABLE 3. FAO CROP COEFFICIENTS (kc) FOR RADIATION METHOD WITH ACTUAL[1] AND ESTIMATED[2] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LABORATORY

Month	1974			1975			1976[3]			1977			AVE (kc)
	Actual ET (in)	ET$_o$ (in)	kc	Actual ET (in)	ET$_o$ (in)	kc	Actual ET (in)	ET$_o$ (in)	kc	Actual ET (in)	ET$_o$ (in)	kc	
Jan	-0.16	1.59	-0.10	-0.03	1.74	-0.02	0.05	1.23	0.04	0.52	0.96	0.54	0.12
Feb	0.02	2.77	0.01	0.04	2.04	0.02	0.44	1.86	0.24	0.35	2.35	0.15	0.10
Mar	1.54	5.15	0.30	1.03	3.39	0.30	0.86	3.87	0.22	0.07	4.00	0.02	0.21
Apr	5.32	7.32	0.73	2.80	4.62	0.61	1.55	5.54	0.28	3.66	6.74	0.54	0.54
May	8.87	10.46	0.85	8.33	6.93	1.20	8.26	9.11	0.91	6.28	6.32	0.99	0.99
Jun	11.19	9.43	1.19	8.11	7.98	1.02	6.91	8.93	0.77	5.63	8.24	0.68	0.92
Jul	12.04	8.40	1.43	8.87	8.62	1.03	9.41	8.44	1.11	8.36	9.24	0.90	1.12
Aug	8.96	7.37	1.22	9.10	7.20	1.26	4.97	7.92	0.63	7.40	6.75	1.10	1.05
Sep	7.21	5.26	1.37	6.69	5.60	1.19	6.11	4.37	1.40	6.54	5.00	1.31	1.32
Oct	2.88	3.27	0.88	3.41	3.37	1.01	2.90	3.27	0.89	3.81	2.71	1.41	1.05
Nov	1.16	1.79	0.65	0.30	1.92	0.16	0.86	1.34	0.64	1.38	1.15	1.20	0.66
Dec	0.24	1.13	0.21	0.57	1.31	0.44	-0.27	0.84	-0.32	1.04	0.84	1.24	0.39
Total	59.27	63.94	0.93	49.22	54.72	0.90	42.06	56.72	0.74	45.04	54.30	0.83	0.85

[1]Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur, 1976, Neyshabouri, 1976, Wilcox, 1978, Staubitz, 1978)

[2]Reference crop evapotranspiration (ET_o)

[3]Due to a hailstorm in August, the third crop was lost, effecting the actual ET values for 1976 (Wilcox)

NOTE: Annual kc values are the ratio of annual actual ET to annual ET_o values, $kc = ET_{actual}/ET_o$

TABLE 4 . FAO CROP COEFFICIENTS (kc) FOR MODIFIED PENMAN METHOD WITH ACTUAL[1] AND ESTIMATED[2] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LABORATORY

Month	1974			1975			1976[3]			1977			AVE (kc)
	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	
Jan	-0.16	1.27	-0.03	-0.03	1.23	-0.02	0.05	1.51	0.03	0.52	1.02	0.51	0.10
Feb	0.02	2.45	0.01	0.04	2.07	0.02	0.44	3.20	0.14	0.35	2.51	0.14	0.08
Mar	1.54	4.72	0.33	1.03	3.93	0.26	0.86	4.54	0.19	0.07	4.62	0.02	0.20
Apr	5.32	6.72	0.79	2.80	4.71	0.59	1.55	5.81	0.27	3.66	6.88	0.53	0.55
May	8.87	8.98	0.99	8.33	6.75	1.23	8.26	8.09	1.02	6.28	6.25	1.00	1.06
Jun	11.19	8.60	1.30	8.11	8.05	1.01	6.91	8.06	0.86	5.63	7.52	0.75	0.98
Jul	12.04	7.85	1.53	8.87	8.02	1.11	9.41	7.74	1.22	8.36	8.10	1.03	1.22
Aug	8.96	6.46	1.39	9.10	6.85	1.33	4.97	7.16	0.69	7.40	6.29	1.18	1.15
Sep	7.21	4.52	1.60	6.69	5.09	1.31	6.11	4.32	1.41	6.54	4.80	1.36	1.42
Oct	2.88	3.12	0.92	3.41	3.71	0.92	2.90	2.96	0.98	3.81	3.21	1.19	1.00
Nov	1.16	1.75	0.66	0.30	2.17	0.14	0.86	1.43	0.60	1.38	1.96	0.70	0.53
Dec	0.24	1.21	0.20	0.57	1.28	0.45	-0.27	1.00	-0.27	1.04	1.74	0.60	0.25
Total	59.27	57.65	1.03	49.22	53.86	0.91	42.06	55.82	0.75	45.04	54.90	0.82	0.88

[1]Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur,1976, Neyshabouri,1976, Wilcox,1978, Staubitz,1978)

[2]Reference crop evapotranspiration (ET_o)

[3]Due to a hailstorm in August, the third crop was lost, effecting the actual ET values for 1976 (Wilcox)

NOTE: Annual kc values are the ratio of annual actual ET to annual ET_o values, $kc = ET_{actual}/ET_o$

TABLE 5 . FAO CROP COEFFICIENTS (kc) FOR CORRECTED PENMAN METHOD WITH ACTUAL[1] AND ESTIMATED[2] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LABORATORY

Month	1974			1975			1976[3]			1977			AVE (kc)
	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	
Jan	-0.16	1.24	-0.13	-0.03	1.19	-0.03	0.05	1.47	0.03	0.52	1.01	0.51	0.10
Feb	0.02	2.49	0.01	0.04	2.03	0.02	0.44	2.87	0.15	0.35	2.51	0.14	0.08
Mar	1.54	5.12	0.30	1.03	3.97	0.26	0.86	4.53	0.19	0.07	4.81	0.01	0.19
Apr	5.32	7.40	0.72	2.80	5.09	0.55	1.55	6.08	0.25	3.66	7.28	0.50	0.51
May	8.87	9.98	0.89	8.33	7.50	1.11	8.26	8.73	0.95	6.28	6.88	0.91	0.97
Jun	11.19	9.53	1.17	8.11	9.03	0.90	6.91	8.92	0.77	5.63	8.27	0.68	0.88
Jul	12.04	8.49	1.42	8.87	8.91	1.00	9.41	8.39	1.12	8.36	8.94	0.94	1.12
Aug	8.96	7.05	1.27	9.10	7.52	1.21	4.97	8.09	0.61	7.40	6.81	1.09	1.05
Sep	7.21	4.87	1.48	6.69	5.46	1.23	6.11	4.56	1.34	6.54	5.08	1.29	1.34
Oct	2.88	3.20	0.90	3.41	3.72	0.92	2.90	3.14	0.92	3.81	3.24	1.18	0.98
Nov	1.16	1.70	0.68	0.30	2.13	0.14	0.86	1.42	0.61	1.38	1.88	0.73	0.54
Dec	0.24	1.16	0.21	0.57	1.24	0.46	-0.27	0.99	-0.27	1.04	1.61	0.65	0.26
Total	59.27	62.23	0.95	49.22	57.79	0.85	42.06	59.19	0.71	45.04	58.32	0.77	0.82

[1]Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur, 1976, Neyshabouri,1976, Wilcox,1978, Staubitz,1978)

[2]Reference crop evapotranspiration (ET_o)

[3]Due to a hailstorm in August, the third crop was lost, effecting the actual ET values for 1976 (Wilcox)

NOTE: Annual kc values are the ratio of annual actual ET to annual ET_o values , $kc = ET_{actual}/ET_o$

TABLE 6 . FAO CROP COEFFICIENTS (kc) FOR MODIFIED PAN EVAPORATION METHOD WITH ACTUAL[1] AND ESTIMATED[2] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LABORATORY

Month	1974			1975			1976[3]			1977			AVE (kc)
	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	Actual ET (in)	ET_o (in)	kc	
Jan	-0.16	1.32	-0.12	-0.03	1.19	-0.03	0.05	0.56	0.09	0.52	0.97	0.54	0.12
Feb	0.02	1.91	0.01	0.04	1.79	0.02	0.44	2.42	0.18	0.35	2.25	0.16	0.09
Mar	1.54	4.86	0.32	1.03	3.73	0.28	0.86	4.80	0.18	0.07	4.22	0.02	0.20
Apr	5.32	6.29	0.85	2.80	4.20	0.67	1.55	5.86	0.26	3.66	6.25	0.59	0.59
May	8.87	8.58	1.03	8.33	7.36	1.13	8.26	8.06	1.02	6.28	5.87	1.07	1.06
Jun	11.19	9.96	1.12	8.11	8.40	0.97	6.91	8.26	0.84	5.63	7.97	0.71	0.91
Jul	12.04	9.00	1.34	8.87	9.25	0.96	9.41	8.21	1.15	8.36	8.96	0.93	1.10
Aug	8.96	7.88	1.14	9.10	7.20	1.26	4.97	6.94	0.72	7.40	7.10	1.04	1.04
Sep	7.21	5.67	1.27	6.69	5.50	1.22	6.11	4.43	1.38	6.54	5.64	1.16	1.26
Oct	2.88	3.29	0.88	3.41	3.54	0.96	2.90	3.35	0.87	3.81	3.89	0.98	0.92
Nov	1.16	1.92	0.60	0.30	1.66	0.18	0.86	1.97	0.44	1.38	2.19	0.63	0.46
Dec	0.24	0.38	0.63	0.57	0.80	0.71	-0.27	1.21	-0.22	1.04	1.50	0.69	0.45
Total	59.27	61.06	0.97	49.22	54.62	0.90	42.06	56.07	0.75	45.04	56.81	0.79	0.85

[1]Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur, 1976, Neyshabouri,1976, Wilcox,1978, Staubitz,1978)

[2]Reference crop evapotranspiration (ET_o)

[3]Due to a hailstorm in August, the third crop was lost, effecting the actual ET values for 1976 (Wilcox)

NOTE: Annual kc values are the ratio of annual actual ET to annual ET_o values, $kc = ET_{actual}/ET_o$

or:
$$kc = \frac{\text{Annual } ET_{actual}}{\text{Annual } ET_o} \quad [26]$$

Due to a discrepancy in the Blaney-Criddle Reference Crop (ET_o) and the actual evapotranspiration values in December, 1976 and January, 1977, the AVE kc value for December and January was determined by averaging the other four FAO methods. Since Reference Crop evapotranspiration (ET_o) is calculated by all of the FAO methods, this averaging process was justifiable because only one set of crop coefficients is required (Doorenbos and Pruitt, 1977). However, in subsequent Tables and calculations, the crop coefficients (AVE kc) values were kept separate and used only on the corresponding FAO methods. For example, the AVE kc values of Table 2 for the modified Blaney-Criddle method were applied to only the Blaney-Criddle (FAO) ET_o values for each location (using equation [24]).

The crop coefficient (kc) which transforms the Reference Crop evapotranspiration (ET_o) to alfalfa evapotranspiration (ET_{crop}) must take into account the local conditions necessary for this transformation. These factors include the time of planting or sowing, individual crop characteristics, stages of crop development, general climatic conditions and length of the growing season (Doorenbos and Pruitt, 1977). By using the lysimeter data, these factors are incorporated into the coefficient automatically. The application of the coefficients should be limited to locations similar in climate, etc., to the station from which the data were obtained. The Fallon crop Coefficient curve is shown in Figure 2. Coefficients of less than 1.00 are indications of "over-estimations" since the coefficient is reducing the ET_o value obtained from the computer program. These

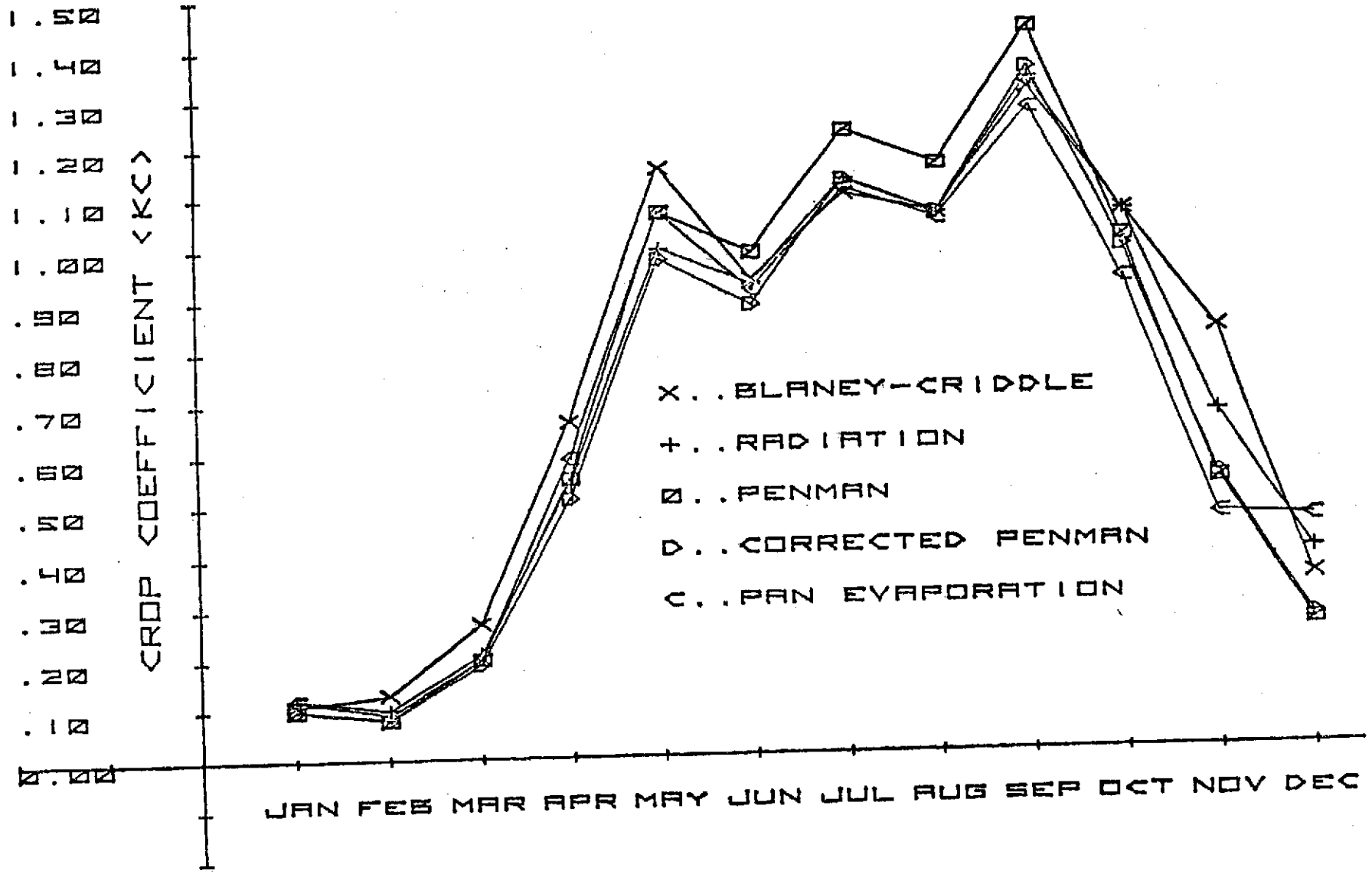

Figure 2. Average Monthly Crop Coefficients Used for Determination of ET_{crop} (1974-1977)

coefficients occur mainly in the late Fall, Winter and early period (November to April). The September coefficients which range from 1.26 to 1.42 indicate that the FAO methods do not anticipate the evapotranspiration demands and therefore the higher coefficient is needed to compensate for this "under-estimation." Overall, the coefficients are in close agreement between methods. Deflections experienced in June, August and October correspond to average first, second and third alfalfa harvest periods for western Nevada.

During the second Crop Water Consumptive Use and Irrigation Water Requirement Technical Committee meeting (Univ. of Nev., Reno, Sept., 1978), a concern as to the choice of the four years of lysimeter data used in the crop coefficient (kc) determination was mentioned. The committee recommended the elimination of 1974 and 1976 lysimeter data since these values varied from the expected or "normal" values of 1975 and 1977. As mentioned previously, the 1974 lysimeter data were higher than expected due to the leaching program initiated to improve the infiltration and drainage in lysimeter A (Tuteur, 1976). The 1976 data (lysimeter B) was lower than expected due to hail storm damage in August, resulting in the loss of the third crop and the reduction of measured evapotranspiration for 1976. Figure 3 compares the recommendations of the committee with the applied methodology and lysimeter values outlined earlier in this section. The "ORIGINAL" plot is the FAO Pan Evaporation method average ET_{crop} using the crop coefficients (AVE kc) recommended on Table 6 and an average of 1976 and 1977 Fallon ET_o data. Omitting the 1974 and 1976 data from the kc computations produces an AVE kc value using only two years of data (1975 and 1977). The "NEW" plot is obtained by applying the two year crop coefficient

and equation [24] to the same Fallon ET_o data. The "LYSIMETER" plot is the average measured evapotranspiration from lysimeter B for 1976 and 1977. An effort is being made to approximate lysimeter or actual evapotranspiration using empirical methodology. The "ORIGINAL" four-year coefficient (as shown in Figure 3) represents a closer fit to measured evapotranspiration and will be used according to the procedure previously mentioned, using Tables 2 through 6 and equation [24] for each location. Table 7 lists the Fallon ET_o data, the two and four-year coefficients and the resulting monthly ET_{crop} obtained by using the "ORIGINAL" and "NEW" crop coefficients.

Table 8 lists the actual or lysimeter evapotranspiration, the Jensen-Haise potential evapotranspiration and corresponding monthly and annual crop coefficients (K_{J-H}) developed to calibrate the Jensen-Haise method to Nevada. The same procedure will be used to calculate the coefficients for the Jensen-Haise method,

$$\text{where: } K_{J-H} = \frac{ET_{actual}}{PET_{J-H}} \quad [27]$$

and: PET_{J-H} = Potential evapotranspiration of tall alfalfa as calculated by equation [3]

$$\text{and: } ET_{crop} = K_{J-H} \times PET_{J-H} \quad [28]$$

that was used to derive the crop coefficients for the FAO Modified methods.

Three sets of crop coefficients will be used in this report according to which methods they are to be applied. For the standard methods the crop coefficient (K) will be used and will equal 1.00 unless otherwise stated,

$$\text{or: } ET_{crop} = K \times PET \quad [29]$$

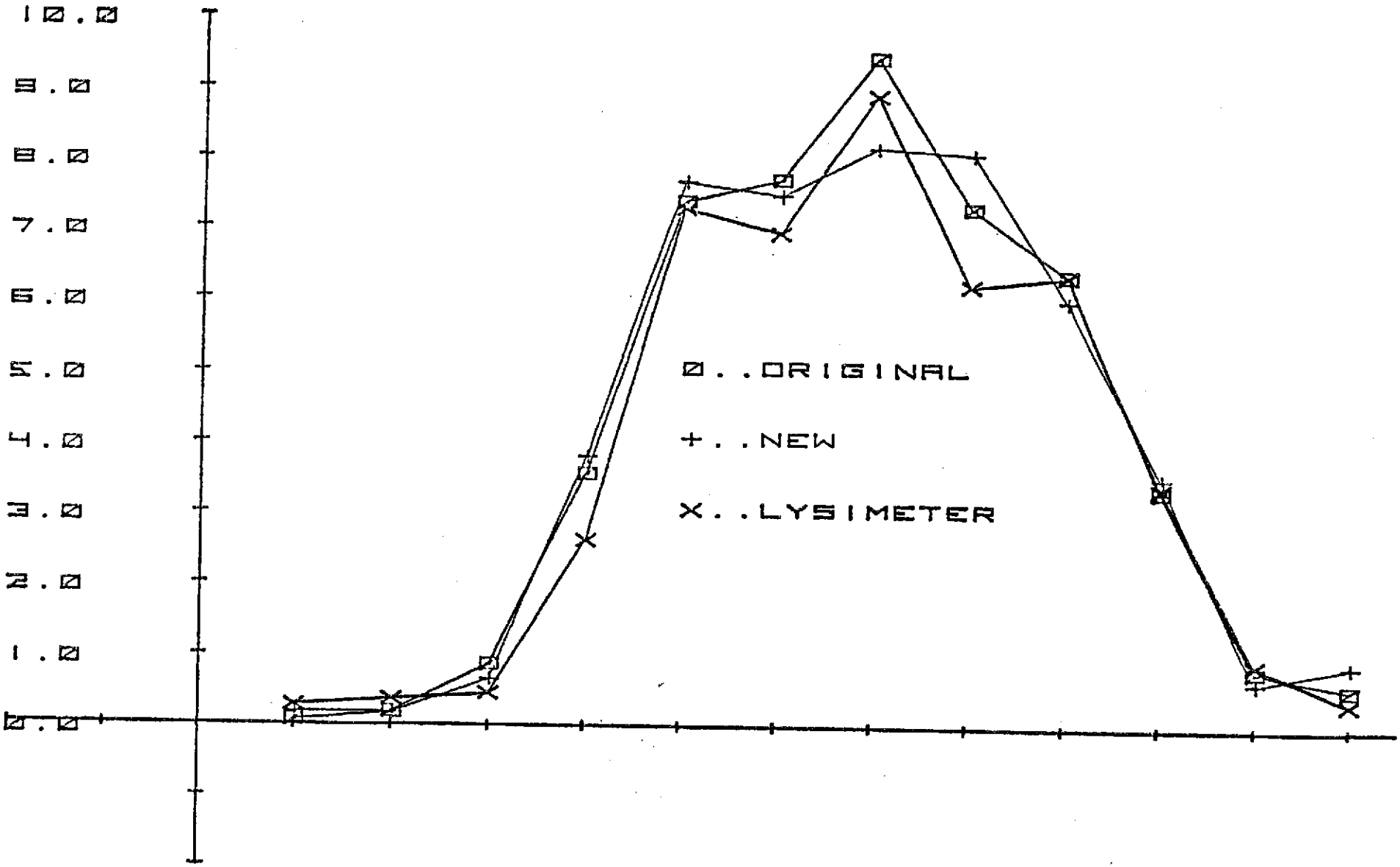

Figure 3. Comparison of ORIGINAL (four year) and NEW (two year) Crop Coefficients Using the FAO Modified Pan Evaporation Method and Lysimeter Data from Fallon, Nevada (1976, 1977)

TABLE 7. VALUES USED FOR JUSTIFICATION OF CROP COEFFICIENT CALCULATIONS USING THE FAO PAN EVAPORATION METHOD AND LYSIMETER DATA FROM FALLON, NEVADA (1976, 1977)

Month	ET_o			kc		ET_{crop}		Average Lysimeter (in)
	1976 (in)	1977 (in)	Ave (in)	Original	New	Original (in)	New (in)	
Jan	0.56	0.97	0.77	0.12	0.26	0.09	0.20	0.28
Feb	2.42	2.25	2.34	0.09	0.08	0.21	0.19	0.37
Mar	4.80	4.22	4.51	0.20	0.15	0.90	0.68	0.46
Apr	5.86	6.25	6.06	0.59	0.63	3.58	3.82	2.61
May	8.06	5.87	6.97	1.06	1.10	7.39	7.67	7.27
Jun	8.26	7.97	8.12	0.95	0.92	7.71	7.47	6.92
Jul	8.21	8.96	8.59	1.10	0.95	9.45	8.16	8.89
Aug	6.94	7.10	7.02	1.04	1.15	7.30	8.07	6.19
Sep	4.43	5.64	5.04	1.26	1.19	6.36	6.00	6.33
Oct	3.35	3.89	3.62	0.93	0.98	3.37	3.55	3.39
Nov	1.97	2.19	2.08	0.42	0.33	0.87	0.69	0.94
Dec	1.21	1.50	1.36	0.45	0.70	0.61	0.95	0.39
TOTAL	56.07	56.81	56.44	0.86	0.86	48.54	48.54	44.01

TABLE 8. CROP COEFFICIENTS[1] (K_{J-H}) FOR JENSEN-HAISE METHOD WITH ACTUAL[2] AND ESTIMATED[3] EVAPOTRANSPIRATION FOR NEWLANDS FIELD LAB (FALLON)

Month	1974			1975			1976			1977			Ave K_{J-H}
	Actual ET (in)	J-H (in)	K_{J-H}	Actual ET (in)	J-H (in)	K_{J-H}	Actual ET (in)	J-H (in)	K_{J-H}	Actual ET (in)	J-H (in)	K_{J-H}	
Jan	-0.16	1.36	-0.12	-0.03	1.29	-0.02	0.05	1.16	0.04	0.50	0.75	0.67	0.14
Feb	0.02	2.36	0.01	0.04	1.80	0.02	0.44	1.59	0.28	0.29	1.80	0.16	0.12
Mar	1.54	4.91	0.31	1.03	3.05	0.34	0.86	3.40	0.25	0.05	3.16	0.02	0.23
Apr	5.32	6.54	0.81	2.80	4.35	0.64	1.55	5.08	0.31	3.66	6.29	0.58	0.59
May	8.87	11.08	0.80	8.33	7.65	1.09	8.26	10.58	0.78	6.28	6.80	0.92	0.90
Jun	11.19	11.97	0.93	8.11	10.09	0.80	6.91	10.46	0.66	6.93	10.39	0.67	0.77
Jul	12.04	10.74	1.12	8.87	11.55	0.77	9.41	11.17	0.84	8.36	11.81	0.71	0.86
Aug	8.96	9.63	0.93	9.10	9.12	1.00	4.97	7.90	0.63	7.40	9.19	0.81	0.84
Sep	7.21	7.08	1.02	6.69	6.97	0.96	6.11	5.88	1.04	6.54	6.39	1.02	1.01
Oct	2.88	3.92	0.73	3.41	3.90	0.87	2.90	3.82	0.76	3.88	3.80	1.02	0.85
Nov	1.16	1.97	0.59	0.30	1.87	0.16	0.86	1.62	0.53	1.02	1.66	0.61	0.47
Dec	0.24	1.00	0.24	0.57	1.26	0.45	-0.27	0.61	-0.44	1.04	1.33	0.78	0.26
TOTAL	59.27	72.56	0.82	49.22	62.90	0.78	42.06	63.27	0.66	45.95	63.37	0.73	0.75

[2] Measured values from lysimeters managed for maximum production in Fallon, Nevada (Tuteur, 1976, Neyshabouri, 1976, Wilcox, 1978, Staubitz, 1978)

[1] $K_{J-H} = \frac{ET_{actual}}{PET_{J-H}}$

[3] Values represent potential evapotranspiration of tall alfalfa without harvest influences (crop consumptive use technical committee meeting, Sept. 1978).

where: K = crop coefficient for standard methods

and: K = 1.00

and: PET = potential evapotranspiration as calculated by the standard methods (equations 1, 3, 8, 10, 12 and 14).

The FAO crop coefficient (kc) will be applied to the FAO modified methods using equation [24] and the Jensen-Haise crop coefficient (K_{J-H}) will be applied to the Jensen-Haise method using equation [28].

Chapter III

RESULTS

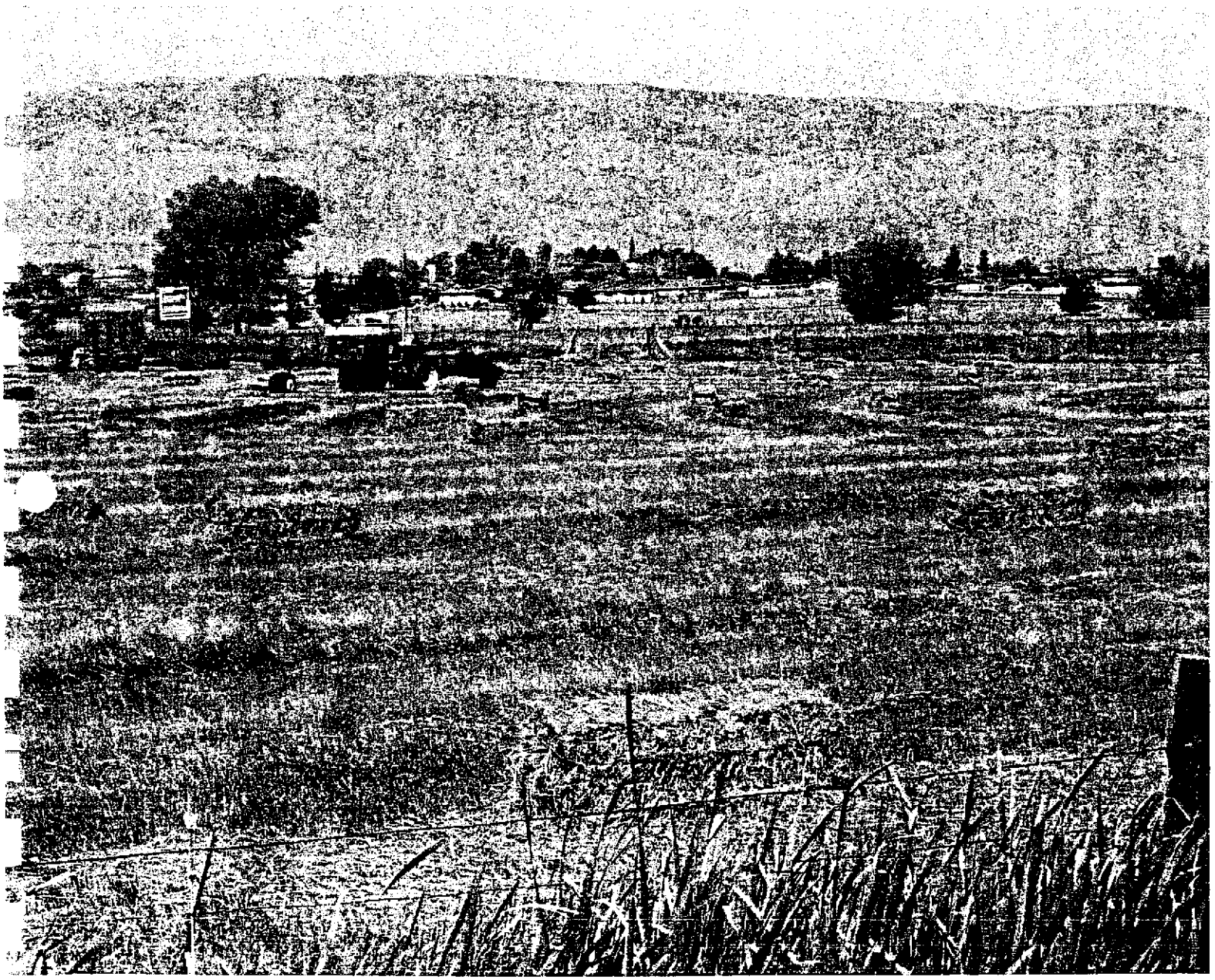

Photo by R. E. WALSTROM

More Efficient Use of Water Results in Increased Production

Chapter III
RESULTS

Annual Summary Tables

A summary of average annual evapotranspiration for six study areas using the Standard methods is reported in Table 7. Table 8 summarizes the average annual Technical Release-21 estimations for the seven study locations and the average annual ET_{crop} values for the FAO modified methods are listed on Table 9.

The summary tables contain average annual values of calculated evapotranspiration for the various methods and locations. For example, Carson Valley was evaluated for three years (1974, 1975 and 1976) at three weather stations (Sarman, Witt and Heritage). The nine annual totals produced an average of 37.73 inches for the Standard Blaney-Criddle method (Table 7). Subsequent averaging produced the remaining entries for the three summary tables.

Locations

Following the summary tables are the various tables and figures which report the FAO ET_{crop}, the Technical Release-21 and the Jensen-Haise evapotranspiration estimates. The results are grouped into each of the seven Nevada locations. In each ET_{crop} table, the Reference Crop (ET_o) values used in calculations are an average value over the period outlined on Table 1. Application of the crop coefficients and averaging is accomplished from left to right on each table. Consequently, column totals may not equal the suggested totals due to rounding errors.

TABLE 9. SUMMARY OF ANNUAL[1] EVAPOTRANSPIRATION FOR SIX[2] LOCATIONS USING THE STANDARD METHODS

Location	Blaney Criddle (in)	Hargreaves (in)	Hargreaves Adjusted (in)	Penman (in)	Jensen Haise (in)	Pan Evaporation (in)
Carson Valley	37.73	47.52	57.15	57.13	58.77	62.31
Fallon	53.15	75.93[3]	85.65[3]	64.30[3]	65.53	71.87
Lovelock	57.11	65.34	76.38	63.20	57.27	57.22
Elko	46.56	45.25	54.22	58.65	57.90	46.84
Diamond Valley	50.02	50.96	59.31	59.34	68.40	44.72
Pahrump	62.72	86.28	97.68	84.26	76.99	100.94

[1]Values shown are an average of annual totals for each location for the years indicated in TABLE 1

[2]Fernley data unavailable

[3]Three year average (1975, 1976, 1977)

NOTE: Values obtained are a result of using K = 1.00 for all locations and methods.

TABLE 10. SUMMARY OF ANNUAL[1] EVAPOTRANSPIRATION FOR SEVEN LOCATIONS USING THE SCS TECHNICAL RELEASE - 21 BLANEY CRIDDLE METHOD

Location	Technical Release - 21 Blaney Criddle (in)
Carson Valley	28.01
Fernley	37.68
Fallon	36.25
Lovelock	34.27
Elko	26.04
Diamond Valley	27.41
Pahrump	52.70

[1]Values shown are an average of annual totals for each location.

TABLE 11. SUMMARY OF AVERAGE ANNUAL EVAPOTRANSPIRATION (ET_{crop})[1] FOR SEVEN LOCATIONS USING THE FAO MODIFIED METHODS

Location	Blaney Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Carson Valley	42.48	45.65	43.36	43.87	42.29
Fernley	53.35	51.78	54.00	52.13	47.13
Fallon	48.97	48.81	48.89	48.69	48.57
Lovelock	48.23	43.94	42.94	42.16	37.96
Elko	39.83	43.66	40.78	40.81	31.51
Diamond Valley	41.93	43.03	41.88	41.83	30.09
Pahrump[2]	65.84	72.14	67.23	68.45	74.37

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada. ET_o used in calculations is an average value

[2] Values shown are average reference crop evapotranspiration (ET_o) estimates (1974, 1975, 1976, 1977)

The Reference Crop evapotranspiration (ET_o), average (ET_o) tables and monthly potential evapotranspiration using the Jensen-Haise method for all locations are in Appendix A. Appendix B contains all of the converted input data used for the evaluation of the FAO, Technical Release-21 and Standard methods in Nevada.

Chapter IV

DISCUSSION AND CONCLUSIONS

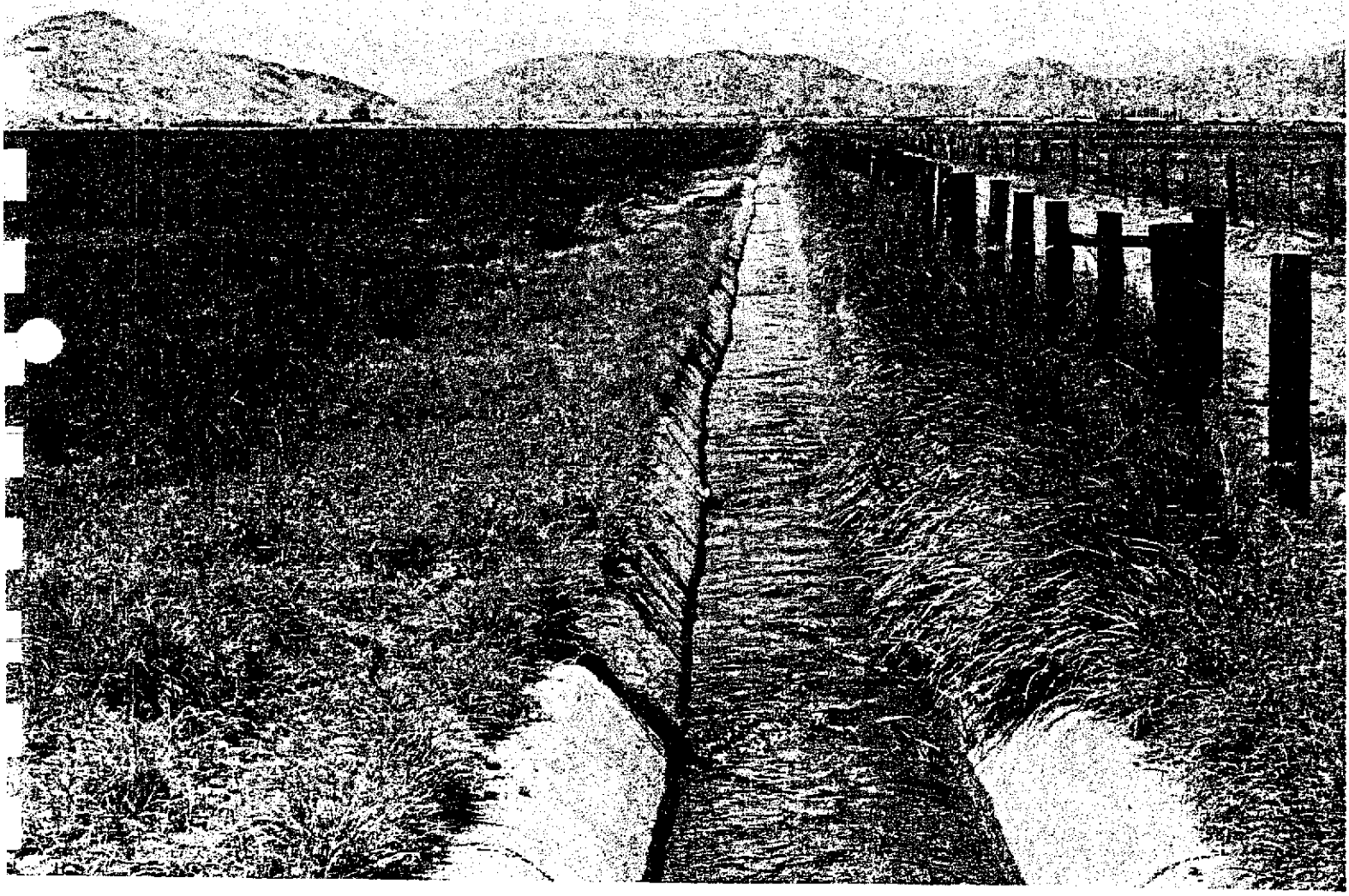

Photo by R. E. WALSTROM

Lifeline: The Desert Comes Alive

Chapter IV
DISCUSSION AND CONCLUSIONS

Carson Valley

Tables 12 through 16 list the evapotranspiration estimations for the various FAO Modified methods. The highest annual estimate was obtained with the Radiation method (45.65 inches) and the lowest being the Pan Evaporation method (42.29 inches). All five FAO methods displayed a peak consumptive use in excess of eight inches in July.

Figure 4 shows the relative profiles of the FAO, Jensen-Haise and Technical Release-21 average monthly values for the year. The Radiation method becomes the highest predictor beginning in May and the Penman and Pan Evaporation being the most conservative of the FAO methods. The Jensen-Haise method, with a crop coefficient derived with the same procedure as the FAO methods, follows the same profile and is intermediate between the FAO methods. The Technical Release-21 method, although slightly higher in the early months, remains considerably lower throughout the year.

Monthly and annual consumptive use estimations using the Technical Release-21 method are reported in Table 17. Annual totals given are as much as fourteen inches less than the lowest FAO method annual value. Peak consumptive use occurred in July and averaged 5.85 inches for the month.

Average monthly evapotranspiration using the Jensen-Haise method with the Fallon crop coefficient (K_{J-H}) correction is shown in Table 18. Peak consumptive use is also in excess of eight inches and occurred in July.

TABLE 12. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING FAO MODIFIED BLANEY CRIDDLE METHOD (1974-1976)

Month	Location			three year ave (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.08	0.09	0.10	0.09
Feb	0.14	0.18	0.17	0.17
Mar	0.67	0.69	0.70	0.68
Apr	2.34	2.54	2.47	2.45
May	6.83	7.31	7.15	7.11
Jun	6.78	7.00	6.95	6.91
Jul	8.20	8.35	8.34	8.29
Aug	7.15	7.04	7.41	7.20
Sep	6.27	6.37	6.59	6.41
Oct	2.58	2.75	2.84	2.72
Nov	0.92	1.13	1.15	1.07
Dec	0.09	0.10	0.13	0.11
Total	41.47	43.36	43.68	42.84

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada

ET_o used in calculations is an average value (1974, 1975, 1976)

TABLE 13. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING FAO RADIATION METHOD (1974-1976)

Month	Location			Three year ave (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.17	0.17	0.17	0.17
Feb	0.19	0.20	0.20	0.20
Mar	0.76	0.77	0.77	0.76
Apr	2.84	2.88	2.88	2.87
May	7.43	7.67	7.60	7.57
Jun	7.62	7.65	7.64	7.64
Jul	8.94	8.81	8.83	8.86
Aug	7.84	7.70	7.86	7.80
Sep	6.53	6.53	6.67	6.57
Oct	2.86	2.91	2.92	2.90
Nov	0.95	1.00	1.00	0.98
Dec	0.33	0.33	0.34	0.33
Total	45.40	45.71	45.84	45.65

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada

ET_o used in calculations is an average value (1974, 1975, 1976)

TABLE 14. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING FAO MODIFIED PENMAN METHOD (1974-1976)

Month	Location			Three year ave (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.17	0.17	0.18	0.17
Feb	0.17	0.18	0.18	0.18
Mar	0.70	0.71	0.73	0.71
Apr	2.48	2.56	2.55	2.53
May	6.56	6.92	6.83	6.77
Jun	6.72	6.86	6.85	6.81
Jul	8.37	8.34	8.39	8.37
Aug	7.20	7.14	7.25	7.20
Sep	6.19	6.22	6.48	6.30
Oct	2.81	2.83	2.96	2.87
Nov	1.01	1.07	1.11	1.07
Dec	0.34	0.33	0.36	0.35
Total	42.57	43.44	44.06	43.36

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada

ET_o used in calculations is an average value (1974, 1975, 1976)

TABLE 15. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING FAO CORRECTED PENMAN (1974-1976)

Month	Location			Three year ave (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.16	0.16	0.17	0.16
Feb	0.16	0.17	0.17	0.17
Mar	0.68	0.69	0.70	0.69
Apr	2.52	2.63	2.61	2.59
May	6.89	7.28	7.19	7.12
Jun	6.98	7.15	7.17	7.10
Jul	8.65	8.74	8.79	8.72
Aug	7.44	7.46	7.53	7.48
Sep	6.28	6.34	6.59	6.41
Oct	2.73	2.77	2.87	2.79
Nov	0.96	1.03	1.05	1.02
Dec	0.33	0.32	0.34	0.33
Total	42.99	44.10	44.52	43.87

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada

ET_o used in calculations is an average value (1974, 1975, 1976)

TABLE 16. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING FAO MODIFIED PAN EVAPORATION METHOD (1974-1976)

Month	Location			Three year ave (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.11	0.14	0.13	0.13
Feb	0.13	0.15	0.16	0.15
Mar	0.61	0.63	0.65	0.63
Apr	2.74	2.99	2.97	2.90
May	7.12	7.46	7.24	7.27
Jun	6.62	7.35	6.74	6.91
Jul	7.84	8.60	7.93	8.12
Aug	6.85	7.26	6.78	6.96
Sep	6.05	6.06	6.07	6.06
Oct	2.53	2.75	2.89	2.72
Nov	0.75	0.91	0.87	0.84
Dec	0.36	0.38	0.41	0.38
Total	40.64	43.84	42.37	42.29

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada

ET_o used in calculations is an average value (1974, 1975, 1976)

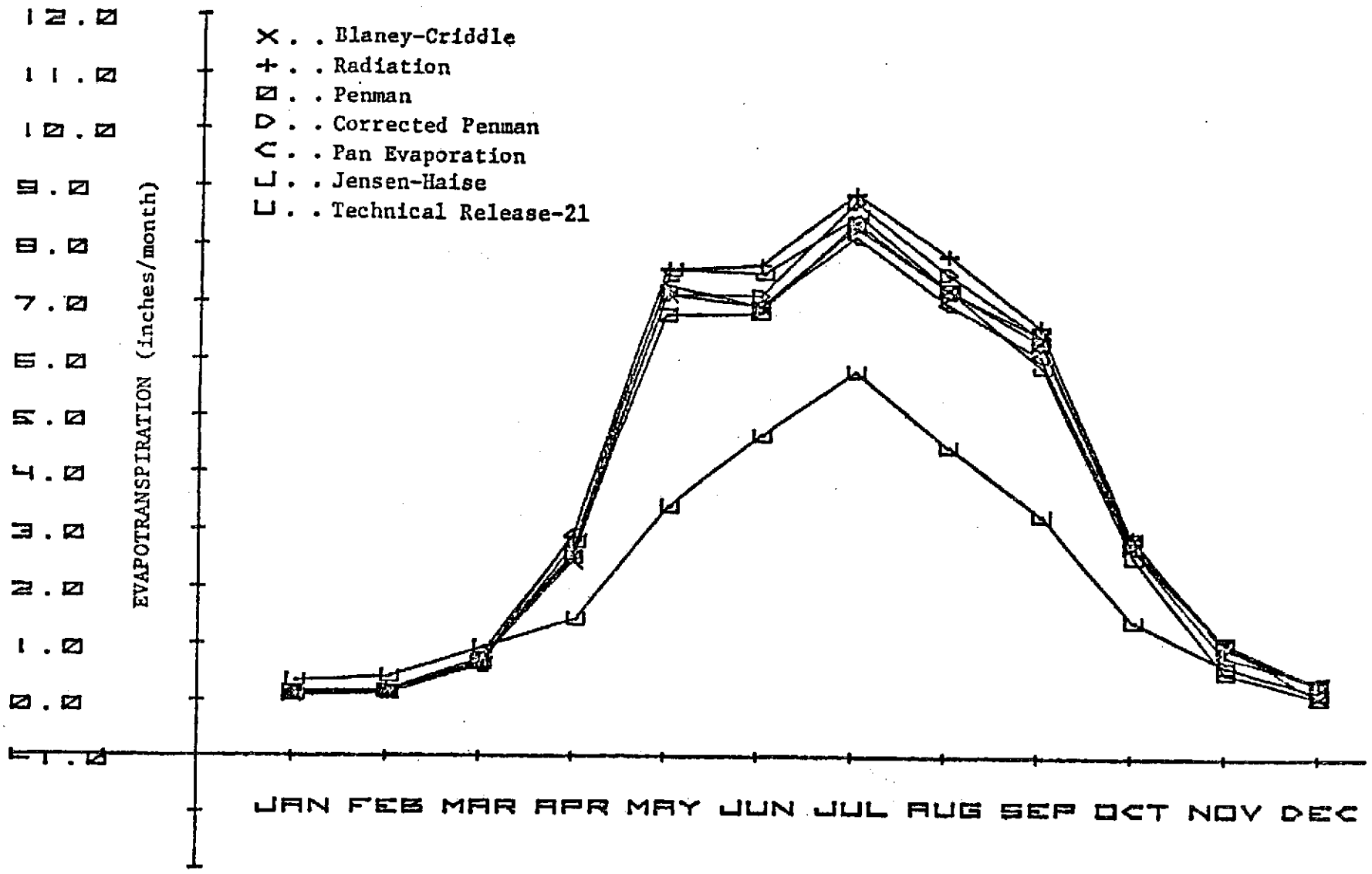

Figure 4. Carson Valley Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1974-1976)

TABLE 17. MONTHLY EVAPOTRANSPIRATION FOR CARSON VALLEY USING SCS TECHNICAL RELEASE - 21 BLANEY CRIDDLE METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.36	0.34	0.36	0.48	0.47	0.47	0.41	0.46	0.47	0.42	0.42	0.43	0.42
Feb	0.52	0.49	0.51	0.48	0.52	0.48	0.42	0.56	0.49	0.47	0.52	0.49	0.50
Mar	1.18	1.14	1.13	1.03	0.99	1.02	0.85	0.93	0.91	1.02	1.02	1.02	1.02
Apr	1.64	1.78	1.63	1.23	1.23	1.31	1.54	1.56	1.76	1.47	1.52	1.57	1.52
May	3.50	4.05	3.70	3.24	3.40	3.54	3.15	3.23	3.53	3.30	3.56	3.59	3.48
Jun	5.07	5.54	5.15	4.13	4.46	4.35	4.29	4.94	4.54	4.50	4.98	4.68	4.72
Jul	5.75	6.13	5.69	5.62	5.93	5.92	5.57	6.03	5.97	5.65	6.03	5.86	5.85
Aug	4.20	4.63	4.84	4.40	4.40	4.52	4.43	4.77	4.55	4.34	4.60	4.64	4.53
Sep	3.13	3.20	3.49	3.36	3.44	3.60	3.13	3.44	3.47	3.21	3.36	3.52	3.36
Oct	1.52	1.58	1.57	1.24	1.46	1.37	1.65	1.69	1.79	1.47	1.58	1.58	1.54
Nov	0.76	0.84	0.84	0.54	0.72	0.62	0.80	0.87	0.92	0.70	0.81	0.79	0.77
Dec	0.28	0.30	0.29	0.38	0.36	0.35	0.22	0.24	0.33	0.29	0.30	0.32	0.31
Total	27.91	30.02	29.20	26.13	27.38	27.55	26.46	28.72	28.73	26.83	28.71	28.49	28.01

TABLE 18. CARSON VALLEY AVERAGE MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITH DERIVED CROP COEFFICIENT (K) (1974, 1975, 1976).

Month	Location			Three Year Ave. (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.15	0.14	0.15	0.15
Feb	0.19	0.18	0.19	0.19
Mar	0.72	0.73	0.75	0.73
Apr	2.85	2.81	2.94	2.87
May	7.41	7.73	7.66	7.60
Jun	7.45	7.66	7.54	7.55
Jul	8.38	8.67	8.60	8.55
Aug	7.17	7.31	7.35	7.27
Sep	5.90	5.83	6.13	5.95
Oct	2.59	2.59	2.79	2.66
Nov	0.66	0.65	0.67	0.66
Dec	0.21	0.21	0.22	0.21
TOTAL	43.48	44.09	44.67	44.08

Fernley

Table 19 reports the monthly evapotranspiration using the FAO Modified methods. The highest annual total using the Penman method was 54.00 inches. The Pan Evaporation method was the lowest with 47.13 inches. Peak consumptive use was in July and varied from 9.14 to 10.23 inches for the Pan Evaporation and Corrected Penman methods, respectively.

Figure 5 shows the profiles of the FAO and Technical Release-21 average monthly values for the year. The first four FAO methods (Blaney-Criddle, Radiation, Penman and Corrected Penman) remain together for the entire twelve month period. The Pan Evaporation method, however, is slightly lower beginning in April and continuing to November. The Technical Release-21 method is above the FAO methods until April and continues to be lower throughout the remainder of the year.

Table 20 reports the monthly Technical Release-21 values. The average annual total was 37.68 inches with an average peak consumptive use, in July, of 8.21 inches for 1973, 1974 and 1975.

All of the Fernley data were obtained directly from the weather station charts and records. A computer program for the Standard methods was never formulated for Fernley, therefore, the Jensen-Haise estimations are unavailable.

TABLE 19. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR FERNLEY USING THE FAO MODIFIED METHODS. (1973-1975)

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.11	0.21	0.20	0.19	0.12
Feb	0.26	0.26	0.24	0.23	0.18
Mar	0.93	0.88	0.95	0.93	0.76
Apr	3.19	3.26	3.41	3.21	3.14
May	8.73	8.60	8.70	8.34	7.52
Jun	8.57	8.10	8.75	8.54	8.29
Jul	10.21	9.74	10.21	10.23	9.14
Aug	8.55	8.38	8.71	8.35	7.73
Sep	7.22	7.37	7.30	6.99	6.49
Oct	3.60	3.57	3.74	3.57	3.10
Nov	1.30	1.27	1.10	1.09	0.90
Dec	0.18	0.50	0.35	0.35	0.41
Total	53.35	51.78	54.00	52.13	47.13

[1] $ET_{(crop)} = kc \times ET_o$ where kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada. ET_o used in calculations is an average value (1973, 1974, 1975).

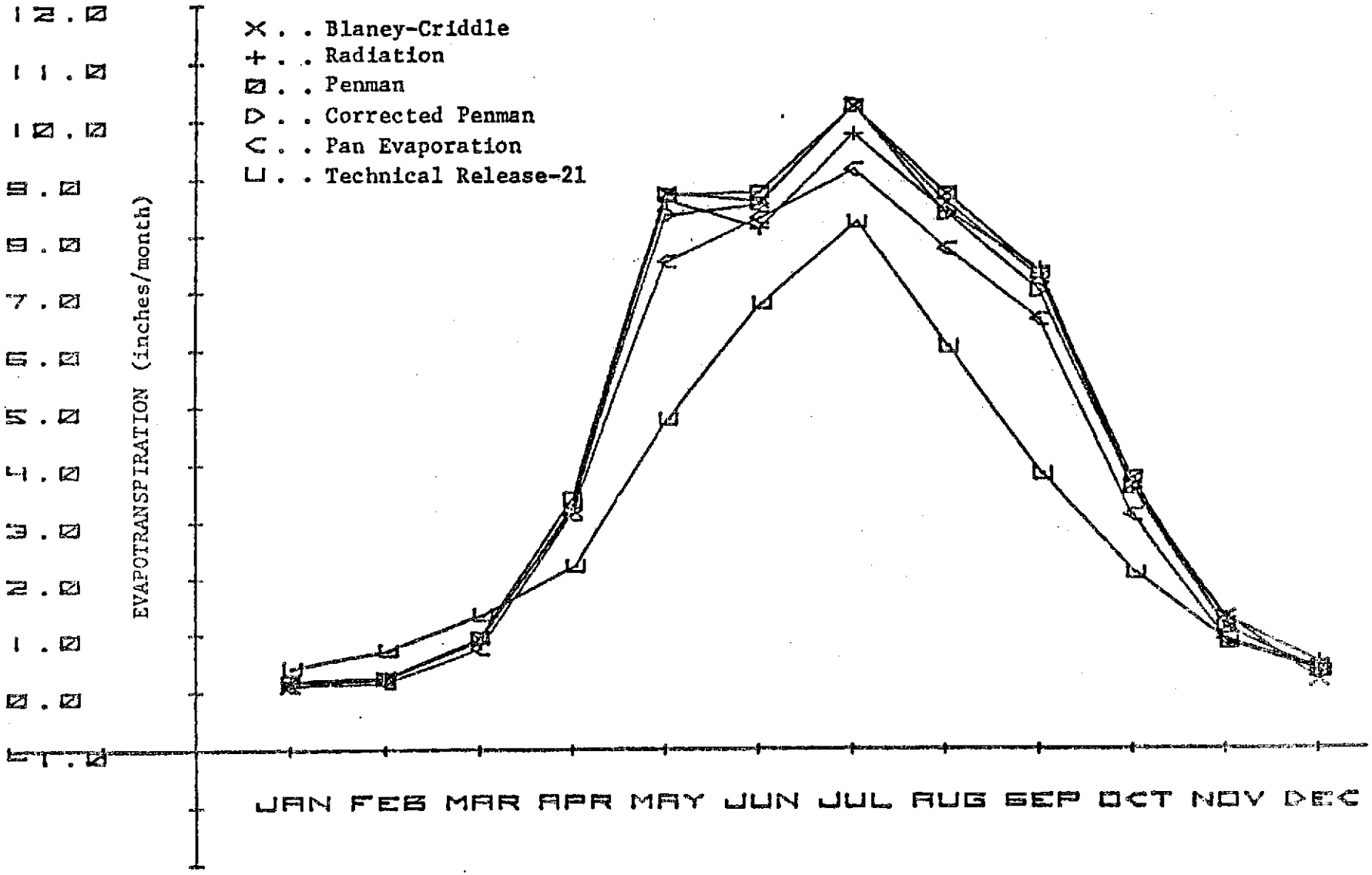

Figure 5. Fernley Average Monthly Evapotranspiration Using the FAO and Technical Release-21 Methods (1973-1975)

TABLE 20. MONTHLY EVAPOTRANSPIRATION FOR FERNLEY USING SCS TECHNICAL RELEASE-21 BLANEY-CRIDDLE METHOD.

Month	1973 (in)	1974 (in)	1975 (in)	Average (in)
Jan	0.29	0.44	0.52	0.42
Feb	0.68	0.88	0.63	0.73
Mar	1.47	1.41	1.18	1.35
Apr	2.32	2.60	1.78	2.23
May	5.14	4.70	4.49	4.78
Jun	7.14	6.81	6.40	6.78
Jul	8.54	7.58	8.52	8.21
Aug	6.21	5.81	6.08	6.03
Sep	3.67	3.71	4.12	3.83
Oct	2.16	1.97	2.16	2.10
Nov	0.94	0.83	0.80	0.86
Dec	0.38	0.35	0.33	0.35
Total	38.94	37.09	37.01	37.68

Fallon

Average monthly and annual alfalfa evapotranspiration (ET_{crop}) using the FAO Modified methods is reported on Table 21. The annual totals differ by only tenths of an inch. The highest estimation was 48.97 inches using the Blaney-Criddle method and the lowest was 48.57 inches using the Pan Evaporation method. Remembering that the crop coefficient (kc) values were derived using the Fallon lysimeter and Reference Crop Evapotranspiration (ET_o) values, the close agreement between the methods seems reasonable.

Figure 6 shows the average monthly FAO, Jensen-Haise and Technical Release-21 profiles for the year. The five FAO methods remain together throughout the year along with the Fallon corrected Jensen-Haise method. Technical Release-21 is slightly higher during the early months and begins dropping below the FAO and Jensen-Haise methods in April and continues to be lower until November.

Table 22 reports the monthly evapotranspiration using the Technical Release-21 method. Annual estimates range from 34.24 to 38.84 inches for 1976 and 1974, respectively. Peak consumptive use was in July and averaged 7.89 inches.

Table 25 reports the average monthly evapotranspiration using the Jensen-Haise method with the Fallon crop coefficient (K_{J-H}) correction. The average annual total for the period of 1974 through 1977 was 49.15 inches. The peak consumptive use occurred in July and averaged 9.74 inches for the same four years.

TABLE 22. MONTHLY EVAPOTRANSPIRATION FOR THE NEWLANDS FIELD LABORATORY USING SCS TECHNICAL RELEASE - 21 BLANEY CIRDDLE METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	0.44	0.35	0.42	0.22	0.36
Feb	0.70	0.46	0.71	0.73	0.65
Mar	1.72	0.99	1.16	1.06	1.23
Apr	3.04	1.64	2.20	2.93	2.45
May	4.98	3.87	4.60	3.52	4.24
Jun	6.94	5.70	5.26	7.42	6.33
Jul	8.21	8.48	7.11	7.74	7.89
Aug	5.94	5.96	5.76	6.19	5.96
Sep	3.63	4.38	4.05	3.89	3.99
Oct	2.08	1.85	2.06	2.20	2.05
Nov	0.82	0.77	0.71	0.76	0.77
Dec	0.34	0.29	0.20	0.52	0.34
Total	38.84	34.74	34.24	37.18	36.25

Lovelock

Two years of data produce the evapotranspiration (ET_{crop}) estimations shown on Table 23 for the Lovelock Valley. The Upper Valley or Ruddle Ranch, requires approximately three inches more in annual consumptive use than the Lower Valley or Carpenter Ranch. This pattern holds true for the first four methods. The Pan Evaporation method is the exception and also the lowest estimation (37.26 inches). The highest annual total was 49.73 inches by the Blaney-Criddle method. Peak consumptive use was in July and ranged from 6.97 to 9.72 inches for the Pan Evaporation and Blaney-Criddle methods, respectively.

Figures 7 and 8 show the profiles for the FAO, Jensen-Haise and Technical Release-21 methods for the Lower and Upper Lovelock Valleys. The FAO methods remain together until May, then the Blaney-Criddle and Pan Evaporation methods separate to become the high and low predictors with the Radiation, Penman and Corrected Penman methods remaining intermediate. The Jensen-Haise method follows the intermediate FAO methods consistently throughout the year. Technical Release-21 is the highest predictor during the early months, but after April, the method falls below the others except for June, July and August when the FAO Pan Evaporation and Technical Release-21 estimate with the same accuracy.

Technical Release-21 estimations for 1976 and 1977 are in Table 24 and averaged 33.56 and 34.98 inches for the Lower and Upper Valleys, respectively.

Table 25 reports the average monthly evapotranspiration estimates using the Jensen-Haise method with the Fallon crop coefficient (K_{J-H}) correction. Average annual totals were 42.32 and 43.58 inches

for the corresponding Lower and Upper Lovelock Valleys. Peak consumptive use was in July and exceeded 8.50 inches for the two areas.

TABLE 23. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] USING THE FAO MODIFIED METHODS (1976,1977)

Month	BLANEY-CRIDDLE		RADIATION		PENMAN		CORR. PENMAN		PAN EVAPORATION	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	0.04	0.07	0.14	0.16	0.11	0.14	0.11	0.13	0.07	0.10
Feb	0.20	0.26	0.20	0.23	0.18	0.21	0.17	0.20	0.17	0.16
Mar	0.79	0.84	0.79	0.82	0.78	0.82	0.75	0.78	0.83	0.80
Apr	2.94	3.05	2.85	2.95	2.91	3.06	2.89	3.01	3.26	3.09
May	6.93	7.37	6.38	6.73	6.25	6.79	6.30	6.75	5.46	5.69
Jun	7.29	7.67	6.29	6.63	5.87	6.44	5.83	6.34	5.32	4.64
Jul	8.93	9.72	8.42	8.97	7.69	8.59	7.81	8.66	7.34	6.97
Aug	8.39	8.58	7.22	7.51	7.33	7.67	7.28	7.54	6.12	5.84
Sep	6.77	7.03	5.95	6.24	5.85	6.29	5.74	6.07	5.23	4.90
Oct	3.77	3.92	3.71	3.93	3.06	3.34	3.03	3.26	2.88	2.97
Nov	1.02	1.11	1.04	1.09	0.79	0.89	0.78	0.86	0.75	0.71
Dec	0.11	0.14	0.34	0.35	0.26	0.27	0.25	0.26	0.41	0.38
Total	46.73	49.73	42.76	45.12	41.15	44.72	40.61	43.70	38.65	37.26

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada. ET_o used in calculations is an average value (1976, 1977).

[2] Carpenter Ranch

[3] Ruddle Ranch

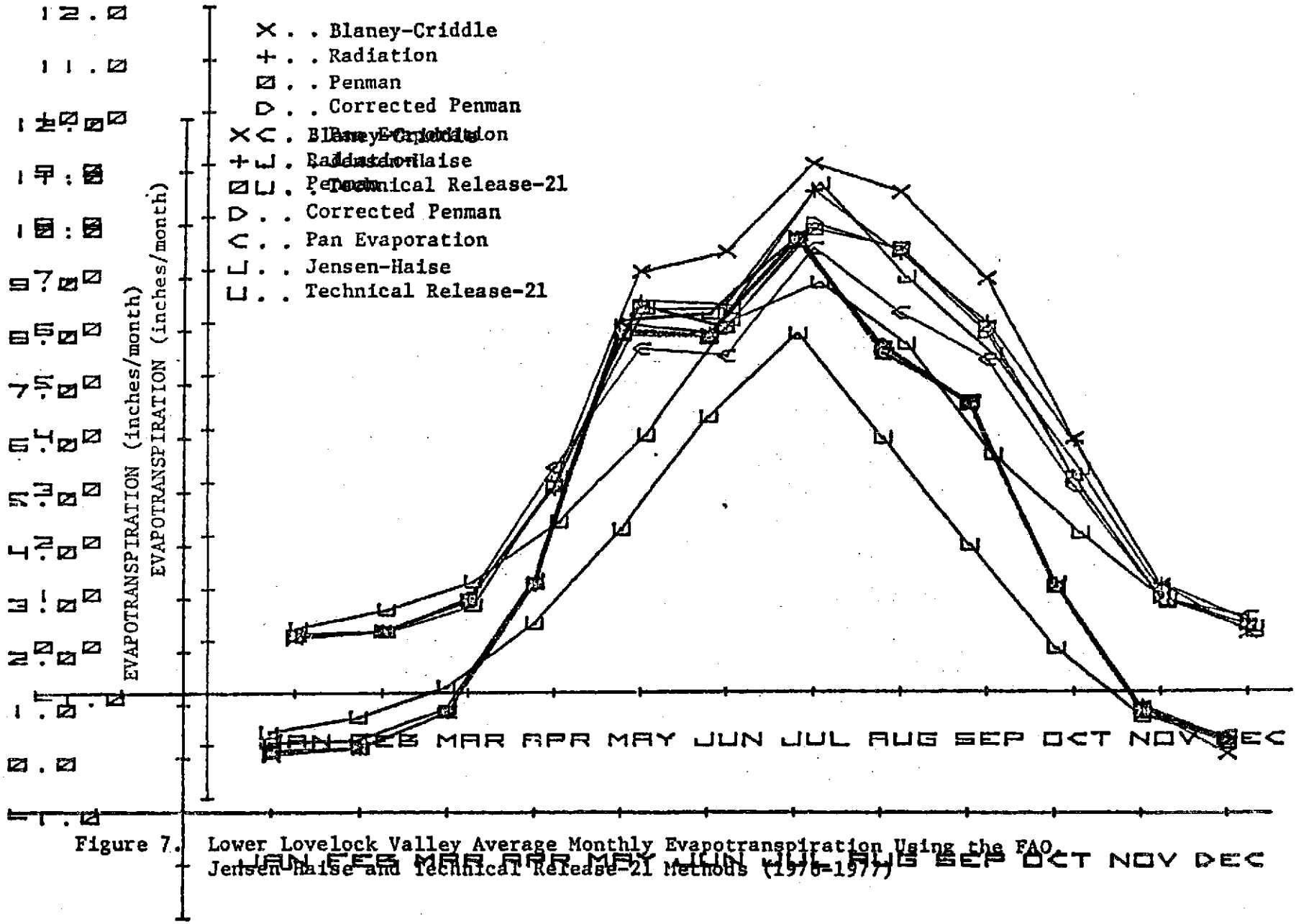

Figure 7. Lower Lovelock Valley Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1976-1977)

Figure 6. Newlands Field Laboratory (Fallon) Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1974-1977)

TABLE 21. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR THE NEWLANDS FIELD LABORATORY USING THE FAO MODIFIED METHODS. (1974-1977)

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.06	0.17	0.13	0.12	0.12
Feb	0.22	0.23	0.20	0.20	0.19
Mar	0.88	0.86	0.89	0.88	0.88
Apr	3.33	3.27	3.32	3.29	3.33
May	8.02	8.13	7.97	8.02	7.92
Jun	7.93	7.96	7.90	7.87	7.87
Jul	9.76	9.72	9.67	9.72	9.75
Aug	7.69	7.68	7.69	7.74	7.57
Sep	6.64	6.68	6.65	6.69	6.69
Oct	3.27	3.32	3.25	3.26	3.24
Nov	0.99	1.02	0.97	0.96	0.89
Dec	0.12	0.40	0.33	0.33	0.44
Total	48.97	48.81	48.89	48.69	48.57

[1] $ET_{crop} = kc \times ET_o$ where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada. ET_o used in calculations is an average value (1974, 1975, 1976, 1977).

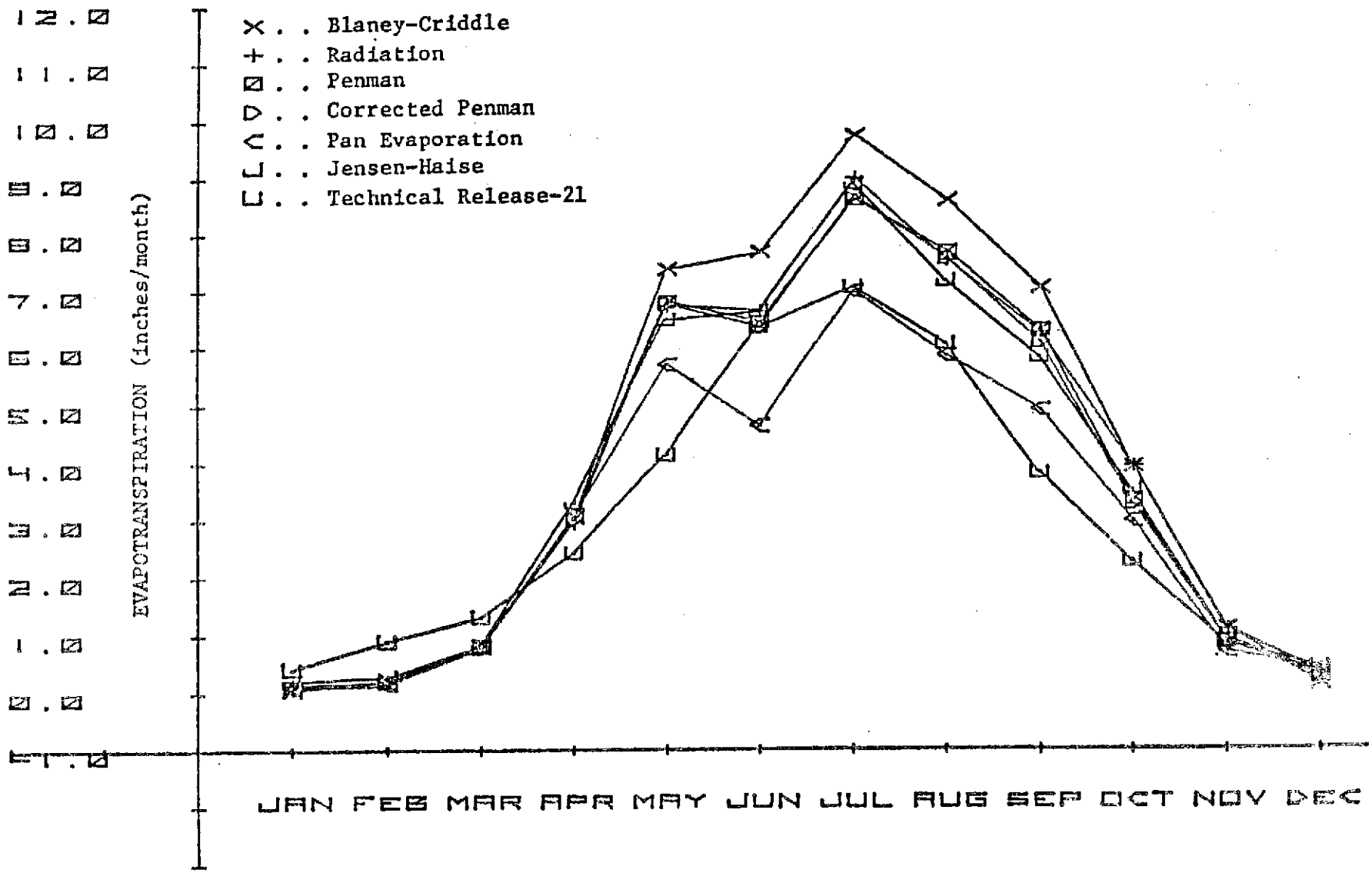

Figure 8. Upper Lovelock Valley Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1976-1977)

TABLE 24. MONTHLY EVAPOTRANSPIRATION FOR LOVELOCK VALLEY USING SCS TECHNICAL RELEASE - 21 BLANEY CRIDDLE METHOD

Month	1976		1977		Average	
	Lower[1] Valley (in)	Upper[2] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	0.40	0.43	0.18	0.26	0.29	0.35
Feb	0.57	0.73	0.71	0.93	0.64	0.83
Mar	1.07	1.25	1.29	1.23	1.18	1.24
Apr	1.80	2.14	2.79	2.56	2.30	2.35
May	4.20	4.66	3.66	3.45	3.93	4.06
Jun	4.72	5.43	7.39	7.06	6.06	6.25
Jul	6.71	6.82	6.85	7.08	6.78	6.95
Aug	5.13	5.60	6.10	6.31	5.62	5.96
Sep	3.70	4.06	3.44	3.38	3.57	3.72
Oct	1.91	2.06	2.29	2.31	2.10	2.19
Nov	0.84	0.88	0.73	0.66	0.79	0.77
Dec	0.16	0.21	0.48	0.46	0.32	0.34
Total	31.21	34.27	35.91	35.69	33.56	34.98

[1]Carpenter Ranch

[2]Ruddle Ranch

TABLE 25. NEWLANDS FIELD LABORATORY (FALLON) (1974-1977) AND LOVELOCK VALLEY (1976-1977) AVERAGE MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITH DERIVED CROP COEFFICIENT (K_{J-H}).

Month	FALLON	LOVELOCK	
	NFL (in)	Lower[1] Valley (in)	Upper[2] Valley (in)
Jan	0.16	0.14	0.15
Feb	0.23	0.21	0.22
Mar	0.83	0.72	0.74
Apr	3.29	3.16	3.22
May	8.13	6.29	6.39
Jun	8.26	6.30	6.53
Jul	9.74	8.63	8.78
Aug	7.53	6.88	7.06
Sep	6.65	5.42	5.72
Oct	3.28	3.28	3.42
Nov	0.84	0.82	0.86
Dec	0.27	0.22	0.23
TOTAL	49.15	42.32	43.58

[1] Carpenter Ranch

[2] Ruddle Ranch

Elko

The Elko or Halleck, Nevada weather station, evapotranspiration (ET_{crop}) estimations are given in Table 26. The highest annual total is 43.66 inches using the Radiation method and the lowest being the Pan Evaporation method (31.51 inches). Peak consumptive use was in July and ranged from 7.49 to 9.67 inches for the Pan Evaporation and Radiation methods, respectively.

Figure 9 shows the profiles for the average monthly evapotranspiration using the FAO, Jensen-Haise and Technical Release-21 methods. The FAO methods with the exception of the Pan Evaporation method, remain in close agreement throughout the year. The Jensen-Haise method (with Fallon crop coefficient correction) is in agreement with the FAO methods. The Technical Release-21 method beginning in March and continuing to November, is the most conservative estimate.

Table 27 reports the Technical Release-21 estimations. Annual totals averaged 26.04 inches with the peak consumptive use averaging 5.75 inches in July.

Table 30 reports the average monthly evapotranspiration using the Jensen-Haise method with the Fallon crop coefficient (K_{J-H}) correction. The average annual total was 43.43 inches for 1976 and 1977. Peak consumptive use was in July and averaged 9.86 inches.

TABLE 26. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR ELKO[2] USING THE FAO MODIFIED METHODS. (1976,1977)

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corr. Penman (in)	Pan Evaporation (in)
Jan	-0.03	0.13	0.11	0.10	0.16
Feb	0.10	0.17	0.15	0.14	0.04
Mar	0.45	0.63	0.60	0.58	0.08
Apr	2.64	2.85	2.57	2.61	1.29
May	6.87	6.65	6.52	6.57	4.82
Jun	6.70	6.93	6.52	6.53	6.02
Jul	8.94	9.67	8.80	9.03	7.49
Aug	7.44	7.19	7.13	7.11	5.74
Sep	6.07	6.76	6.55	6.57	5.51
Oct	2.85	3.39	2.65	2.68	2.49
Nov	0.50	0.89	0.70	0.70	0.51
Dec	-0.07	0.35	0.22	0.22	0.48
Total	39.83	43.66	40.78	40.81	31.51

[1] $ET_{crop} = kc \times ET_o$, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada. ET_o used in calculations is an average value (1976, 1977).

[2] Halleck weather station.

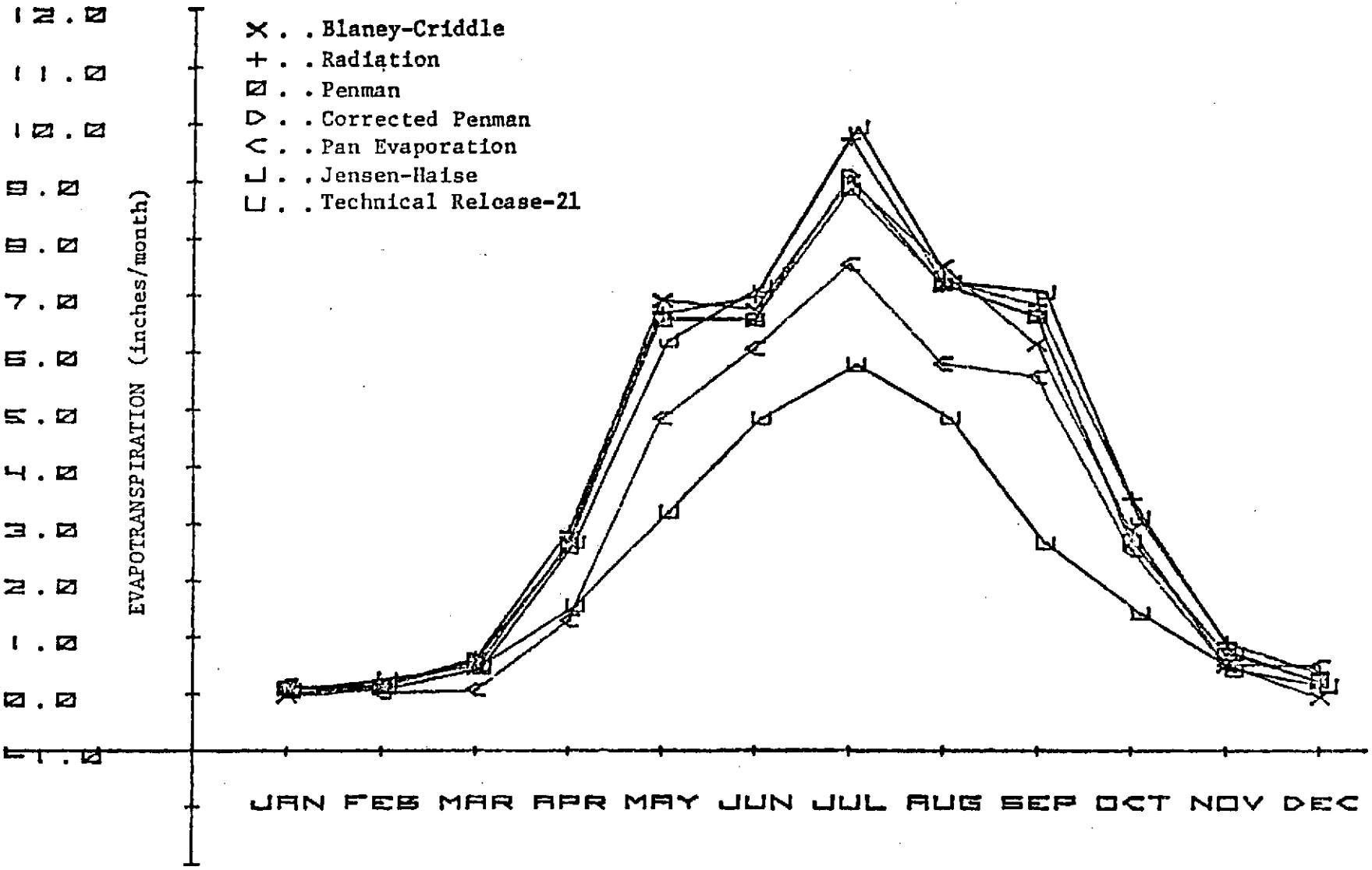

Figure 9. Elko Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1976-1977)

TABLE 27. MONTHLY EVAPOTRANSPIRATION FOR ELKO[1] USING SCS TECHNICAL RELEASE-21 BLANEY-CRIDDLE METHOD.

Month	1976 (in)	1977 (in)	Average (in)
Jan	0.26	0.01	0.14
Feb	0.37	0.26	0.32
Mar	0.78	0.34	0.56
Apr	1.24	1.95	1.60
May	3.64	2.82	3.23
Jun	4.17	5.51	4.84
Jul	6.07	5.42	5.75
Aug	4.58	5.08	4.83
Sep	3.01	2.33	2.67
Oct	1.35	1.57	1.46
Nov	0.52	0.44	0.48
Dec	0.08	0.27	0.18
Total	26.07	26.00	26.04

[1]Halleck, Nevada weather station.

Diamond Valley

Diamond Valley is located near Eureka, Nevada. The evapotranspiration (ET_{crop}) estimations are given in Table 28. The highest total was 43.03 inches using the Radiation method and the Pan Evaporation method was the lowest with 30.09 inches. Peak consumptive use was in July and ranged from 5.70 to 9.11 inches for the Pan Evaporation and Radiation methods, respectively.

Figure 10 shows the profiles for the average monthly evapotranspiration using the FAO, Jensen-Haise and Technical Release-21 methods. Four FAO methods (Blaney-Criddle, Radiation, Penman and Corrected Penman) remain together with the Pan Evaporation method showing a considerable deviation beginning in May. The Jensen-Haise method (with Fallon correction) becomes the highest predictor beginning in March and continues to be the highest until October. The Technical Release-21 method is the most conservative beginning in April and exceeds the FAO Pan Evaporation estimate in July and August, returning to the lowest estimate for the rest of the year.

Table 29 shows the monthly and annual values using Technical Release-21 for 1976 and 1977. Average annual consumptive use was 27.41 inches with an average peak use of 6.02 inches in July.

Table 30 reports the average monthly evapotranspiration using the Jensen-Haise method with the Fallon crop coefficient (K_{J-H}) correction. Average annual total for 1976 and 1977 was 51.30 inches with a peak consumptive use of 10.94 inches in July.

TABLE 28. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR DIAMOND VALLEY[2] USING THE FAO MODIFIED METHODS. (1976,1977)

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	-0.03	0.10	0.10	0.09	0.08
Feb	0.13	0.17	0.15	0.14	0.07
Mar	0.59	0.69	0.66	0.64	0.30
Apr	3.12	3.05	2.85	2.88	2.77
May	6.92	6.64	6.43	6.52	5.46
Jun	7.14	7.17	6.80	6.85	5.41
Jul	8.75	9.11	8.61	8.81	5.70
Aug	7.55	7.42	7.13	7.20	4.80
Sep	5.46	5.61	5.78	5.67	3.23
Oct	3.05	3.19	2.98	2.93	2.48
Nov	0.90	0.91	0.96	0.93	0.52
Dec	-0.04	0.30	0.29	0.28	0.21
Total	41.93	43.03	41.88	41.83	30.09

[1] ET_{crop} = kc x ET_o, where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada, ET_o used in calculations is an average value (1976, 1977).

[2] Eureka, Nevada weather station.

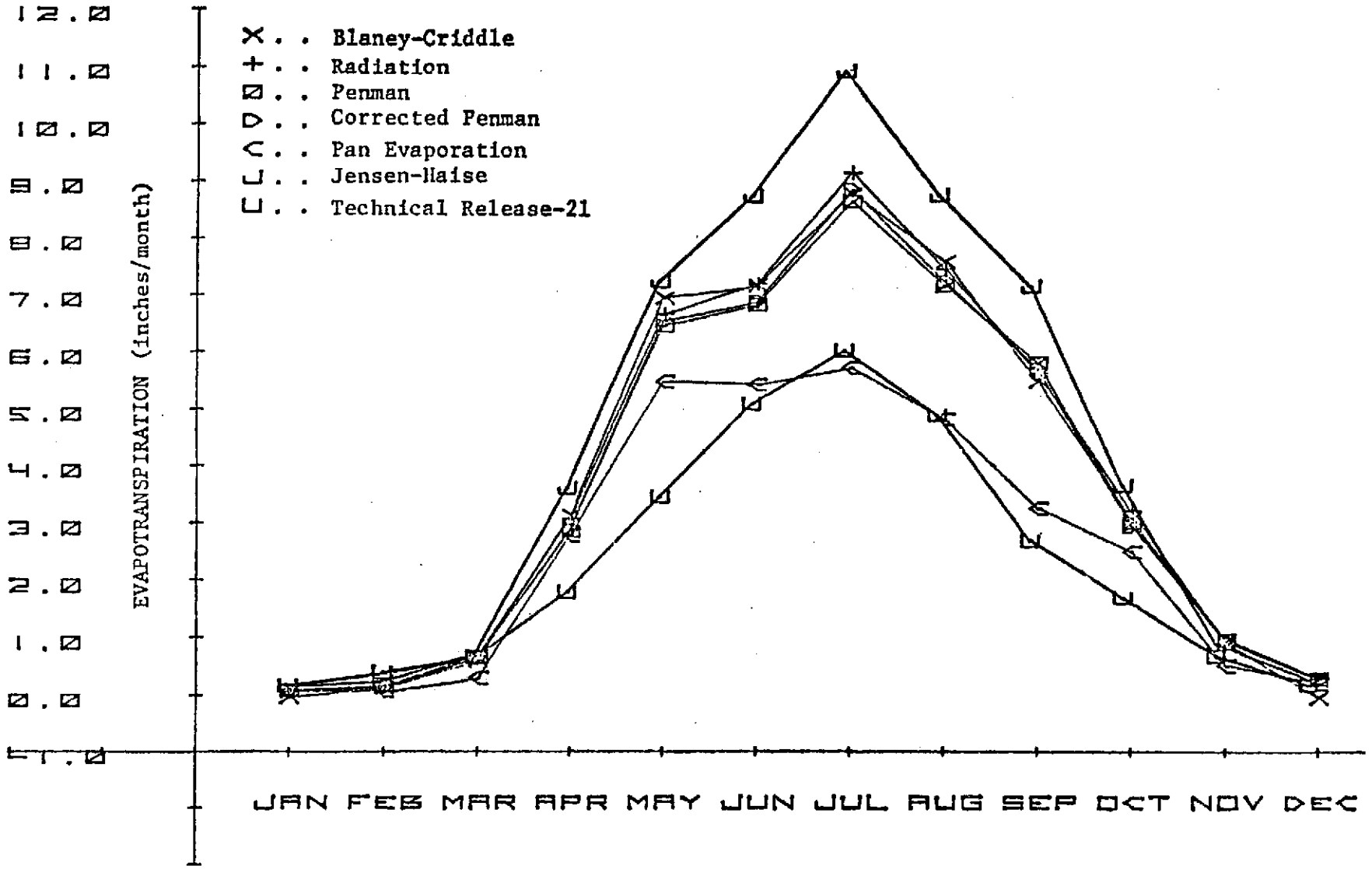

Figure 10. Diamond Valley Average Monthly Evapotranspiration Using the FAO, Jensen-Haise, and Technical Release-21 Methods (1976-1977)

TABLE 29. MONTHLY EVAPOTRANSPIRATION FOR DIAMOND VALLEY[1] USING SCS TECHNICAL RELEASE-21 BLANEY-CRIDDLE METHOD.

Month	1976 (in)	1977 (in)	Average (in)
Jan	0.14	0.11	0.13
Feb	0.28	0.43	0.36
Mar	0.67	0.56	0.62
Apr	1.60	1.93	1.77
May	3.79	3.08	3.44
Jun	4.50	5.67	5.09
Jul	6.18	5.86	6.02
Aug	4.46	5.30	4.88
Sep	2.62	2.72	2.67
Oct	1.43	1.90	1.67
Nov	0.66	0.63	0.65
Dec	0.13	0.16	0.15
Total	26.46	28.35	27.41

[1]Eureka, Nevada weather station.

through 1977 was 52.70 inches with an average peak consumptive use of 10.01 inches in July for the same four year period.

Table 37 reports the monthly evapotranspiration using the Jensen-Haise method without correction (K=1.00). These values represent potential evapotranspiration of tall alfalfa without harvest or other local climatic factors. Peak consumptive use was in July and averaged 11.52 inches with an average annual total of 76.99 inches.

TABLE 31. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO MODIFIED BLANEY CRIDDLE METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	1.59	1.97	2.08	1.41	1.76
Feb	2.39	2.97	2.84	3.07	2.82
Mar	4.52	3.77	4.49	4.61	4.35
Apr	5.52	5.50	5.99	6.70	5.93
May	7.90	7.25	9.08	6.80	7.76
Jun	9.38	9.17	10.48	9.79	9.71
Jul	8.49	10.05	10.34	10.04	9.73
Aug	8.27	8.73	9.10	9.06	8.79
Sep	6.54	6.58	6.46	7.34	6.73
Oct	3.90	4.37	4.80	5.18	4.56
Nov	1.94	2.33	2.28	2.78	2.33
Dec	1.22	1.28	1.38	1.64	1.38
Total	61.66	63.97	69.32	68.42	65.84

[1]Reference crop evapotranspiration

TABLE 32. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO RADIATION METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	1.88	2.64	2.69	1.97	2.30
Feb	3.17	3.56	3.52	4.09	3.59
Mar	5.50	4.60	6.14	5.69	5.48
Apr	7.15	6.88	7.62	8.11	7.44
May	9.18	8.62	10.05	7.06	8.73
Jun	9.80	10.07	10.84	9.81	10.13
Jul	8.14	10.33	9.61	9.70	9.45
Aug	8.67	9.25	9.31	8.45	8.92
Sep	6.77	6.88	6.01	7.20	6.72
Oct	3.90	4.92	4.80	5.14	4.69
Nov	2.14	2.83	2.70	3.51	2.80
Dec	1.69	2.00	2.22	1.74	1.91
Total	67.99	72.58	75.51	72.47	72.14

[1]Reference crop evapotranspiration

TABLE 33. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO MODIFIED PENMAN METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	2.34	2.36	2.40	1.82	2.23
Feb	2.99	3.42	3.14	3.62	3.29
Mar	5.63	4.78	5.24	5.67	5.33
Apr	6.91	6.46	6.48	7.47	6.83
May	8.85	7.81	8.54	6.75	7.99
Jun	9.72	9.66	9.61	8.70	9.42
Jul	8.55	9.80	9.05	9.24	9.16
Aug	8.01	8.81	8.34	7.96	8.28
Sep	6.36	6.00	5.53	6.53	6.11
Oct	3.75	4.48	4.19	4.38	4.20
Nov	2.29	2.77	2.30	2.90	2.57
Dec	1.79	1.86	1.72	1.94	1.83
Total	67.19	68.21	66.54	66.98	67.23

[1]Reference crop evapotranspiration

TABLE 34. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO CORRECTED PENMAN METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	2.12	2.26	2.19	1.79	2.09
Feb	2.88	3.35	3.16	3.54	3.23
Mar	5.48	4.90	5.18	5.61	5.29
Apr	6.92	6.86	6.85	7.39	7.01
May	8.94	8.01	8.87	7.27	8.28
Jun	9.62	9.60	9.82	9.20	9.56
Jul	8.60	10.11	9.58	9.63	9.48
Aug	8.12	8.91	8.76	8.50	8.57
Sep	6.42	6.35	5.95	6.95	6.42
Oct	3.76	4.49	4.36	4.53	4.29
Nov	2.20	2.59	2.30	2.84	2.48
Dec	1.70	1.77	1.69	1.85	1.75
Total	66.76	69.21	68.71	69.10	68.45

[1]Reference crop evapotranspiration

TABLE 35. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO MODIFIED PAN EVAPORATION METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	1.57	3.04	2.11	2.01	2.18
Feb	4.73	3.59	2.01	4.20	3.63
Mar	5.99	4.66	5.93	5.76	5.59
Apr	7.66	7.16	6.13	6.82	6.94
May	9.34	8.86	8.95	5.78	8.23
Jun	11.22	10.79	10.79	8.98	10.45
Jul	11.52	11.17	8.46	9.42	10.14
Aug	9.18	11.43	9.29	7.18	9.27
Sep	8.35	7.57	5.38	6.69	7.00
Oct	4.38	5.67	4.46	4.96	4.87
Nov	2.87	3.48	2.79	3.96	3.28
Dec	2.24	3.51	2.65	2.80	2.80
Total	79.05	80.93	68.95	68.56	74.37

[1]Reference crop evapotranspiration

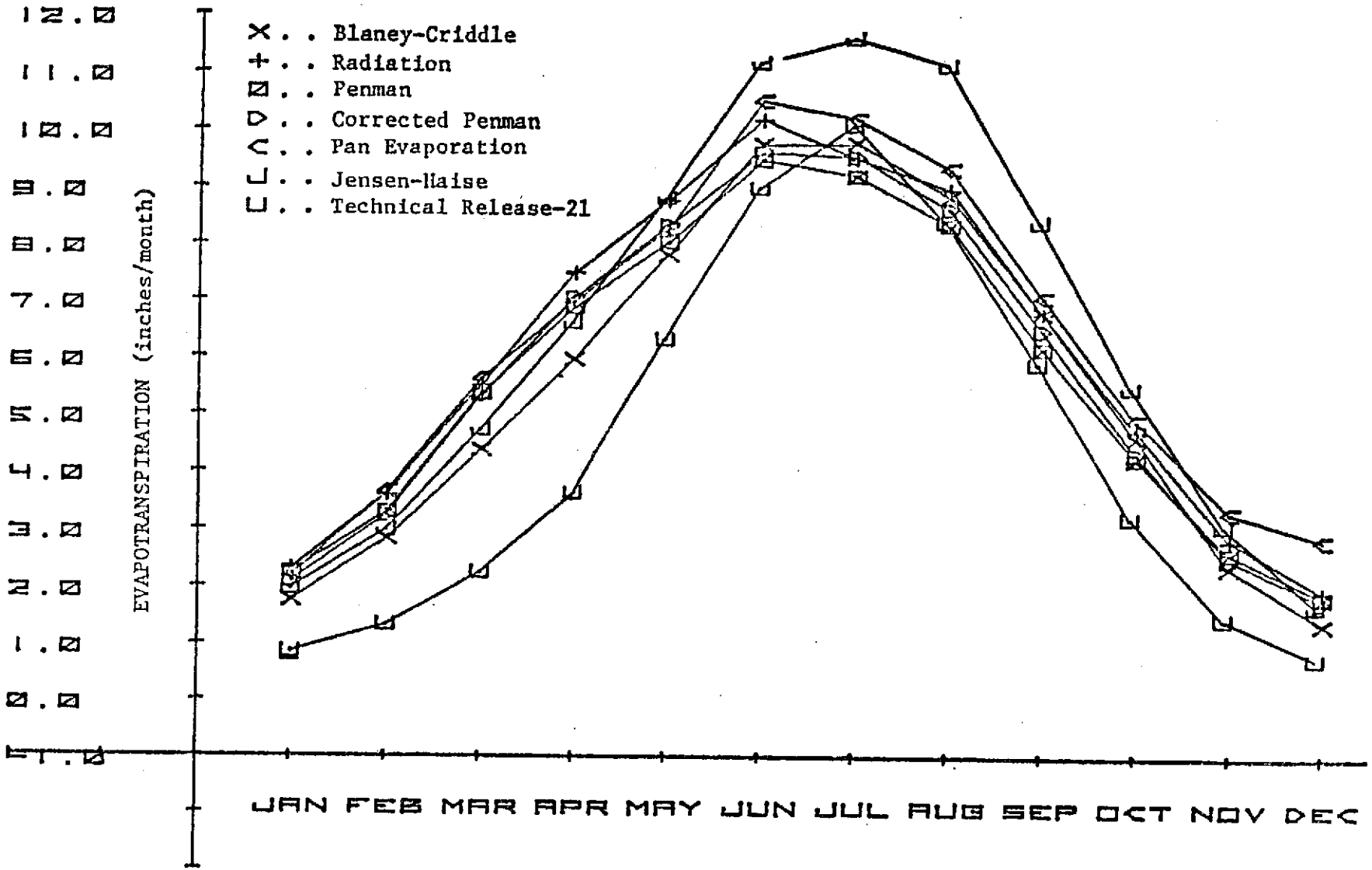

Figure 11. Pahrump Valley Average Monthly Evapotranspiration Using the FAO, Jensen-Haise and Technical Release-21 Methods (1974-1977)

TABLE 36. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION USING SCS TECHNICAL RELEASE - 21 BLANEY CRIDDLE METHOD

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	0.81	0.83	1.12	0.61	0.84
Feb	1.21	1.35	1.54	1.18	1.32
Mar	2.73	1.91	2.38	1.87	2.22
Apr	3.64	2.95	3.87	3.91	3.59
May	6.98	5.89	6.98	5.19	6.26
Jun	9.50	8.29	8.49	9.42	8.93
Jul	9.91	10.30	9.57	10.27	10.01
Aug	8.56	8.34	7.49	8.90	8.32
Sep	6.36	6.00	5.47	5.50	5.83
Oct	3.37	2.96	2.91	3.45	3.17
Nov	1.42	1.45	1.33	1.56	1.44
Dec	0.65	0.75	0.67	0.97	0.76
Total	55.14	51.02	51.82	52.83	52.70

TABLE 37. PAHRUMP VALLEY MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITHOUT CORRECTION.[1] (1974 - 1977)

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	AVERAGE (in)
Jan	1.57	2.24	2.31	1.64	1.94
Feb	2.65	2.75	3.07	3.37	2.96
Mar	5.05	4.15	5.43	4.07	4.68
Apr	6.37	6.08	6.94	6.81	6.55
May	9.54	9.02	9.56	6.88	8.75
Jun	10.73	11.05	10.91	11.71	11.10
Jul	10.55	12.63	11.66	11.24	11.52
Aug	(11.95)[2]	11.20	10.55	10.48	11.05
Sep	8.33	8.81	7.52	8.60	8.32
Oct	4.85	5.86	5.34	5.63	5.42
Nov	2.39	4.18	2.56	3.03	3.04
Dec	1.47	2.00	1.68	1.54	1.67
TOTAL	75.45	79.97	77.53	75.00	76.99

[1] Values represent potential evapotranspiration of tall alfalfa without harvest influences (Crop Consumptive Use Technical Committee meeting, Sept. 1978).

[2] Estimated value, data from 8/8 to 8/14 missing.

Method Comparisons

This section, on an annual basis, presents a comparison between the Standard, FAO and Technical Release-21 methods. As previously explained, the Standard methods were not evaluated for the Fernley area and do not appear on Figures 12 and 13. The Pahrump values for the FAO Modified methods (Figures 14 and 15) are Reference Crop evapotranspiration (ET_o) estimates.

Figure 12 is a plot of the six Standard methods with K = 1.00. The original Blaney Criddle method appears to be the most conservative estimate.

Figure 13 shows the Standard methods (K = 1.00) with the addition of the Technical Release-21 method. In all locations, Technical Release-21 is lower by as much as 22 inches in annual evapotranspiration estimates (Lovelock). Therefore, it is the Technical Release-21 method that is the most conservative estimate when compared with the Standard methods.

Figure 14 shows the FAO Modified methods of which the Pan Evaporation method is the lowest predictor for all locations, except Pahrump. The FAO Modified Pan Evaporation method shows a deviation from the other four FAO Modified methods in the Elko and Diamond Valley locations. A variety of climatic and physical factors could account for the FAO Pan Evaporation method to drop below the other estimations given by the remaining four FAO methods. A check of physical elements was considered. The evaporation pans are filled each week using a graduated cylinder in which each graduation represents 0.01 inches of evaporation in the corresponding Class A

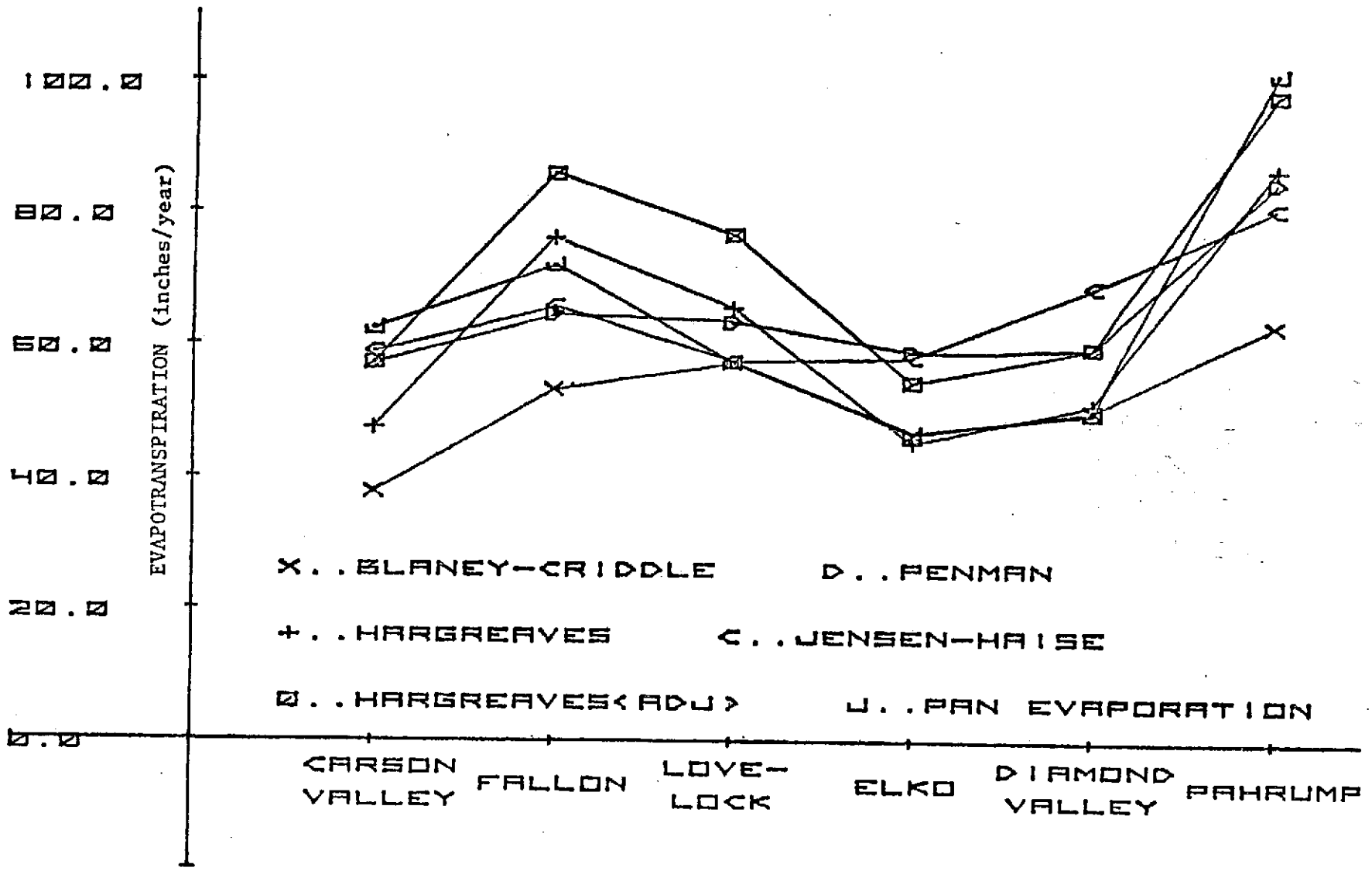

Figure 12. Average Annual ET for Six Locations Using the Standard Methods

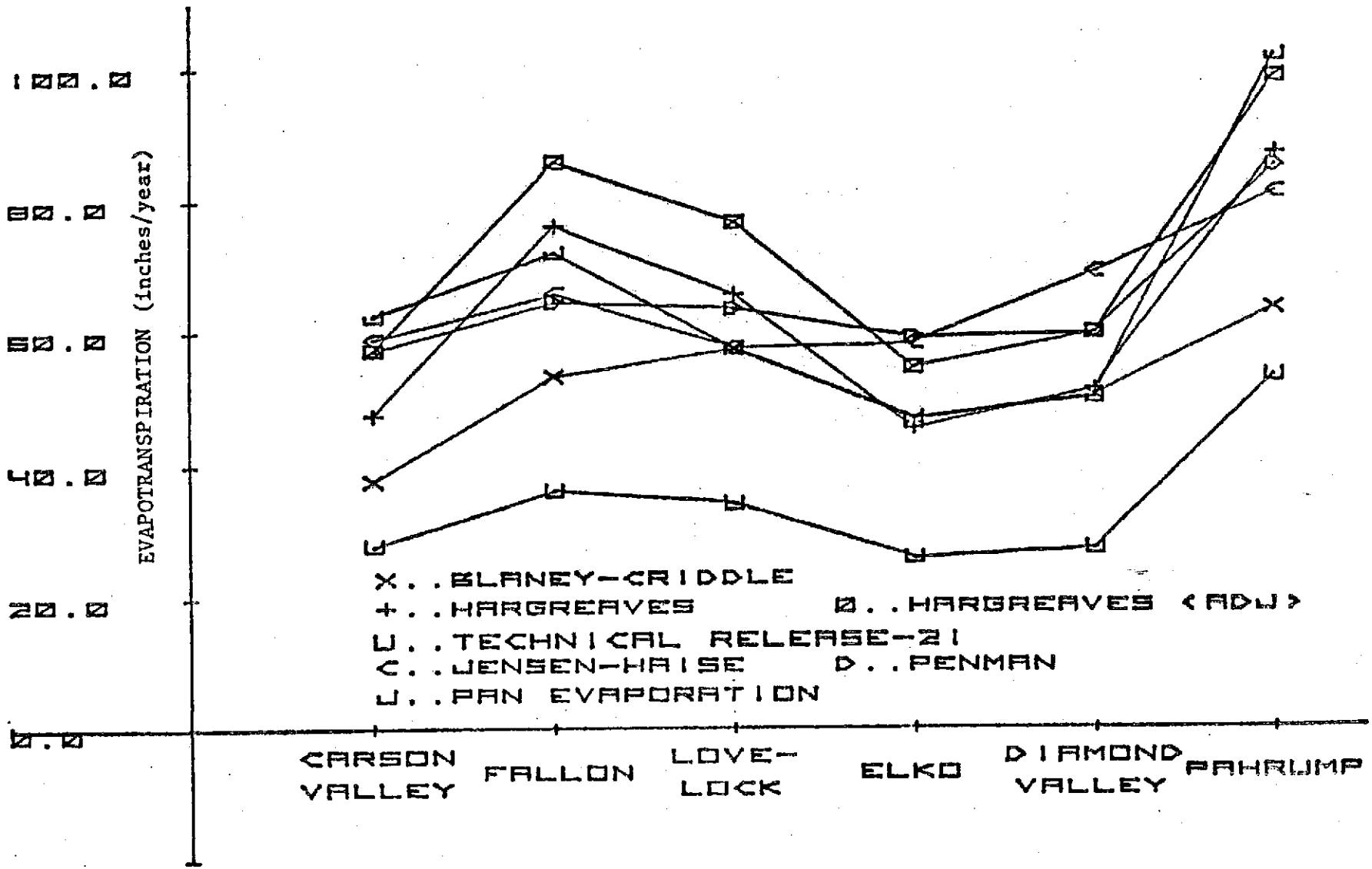

Figure 13. Average Annual ET for Six Locations using the Standard Methods and Technical Release-21

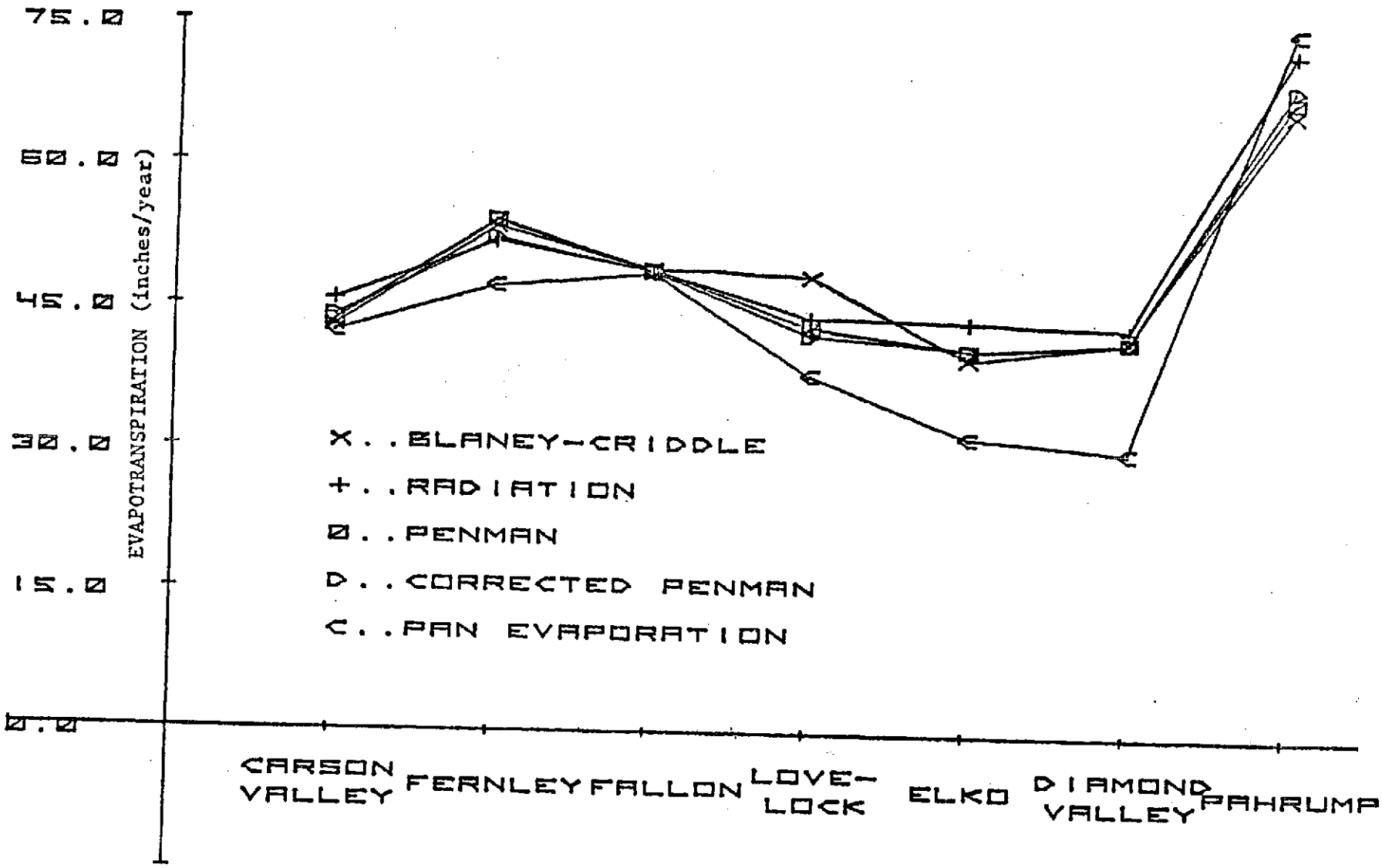

Figure 14. Average Annual ET_{crop} for Seven Locations Using the FAO Modified Methods

evaporation pan. Measurements and calculations show that for each location the cylinder and corresponding evaporation pan were compatible and were giving accurate readings. Discussions with each of the persons responsible for recording and maintaining the weather stations showed that the accuracy of the data was excellent. Therefore, the possibility of substandard evaporation data was dismissed. Assuming that the actual pan evaporation is correct, an attempt to explain the differences in estimates of the Pan Evaporation method was begun by developing a ratio of actual pan evaporation to Reference Crop evapotranspiration,

or:
$$kp = \frac{PAN_{actual}}{ET_o} \qquad [30]$$

for each location. The values obtained by the FAO Modified Blaney-Criddle, Radiation, Penman and Corrected Penman methods were averaged. The results are shown in Table 38, column (1). Column (2) of Table 38 shows the same ratio using the FAO Modified Pan Evaporation method. Using these data, the percentage difference required to bring the Reference Crop evapotranspiration up to the Fallon values is shown in column (3). With the exception of Lovelock, a relationship between the ratios and altitude seems apparent. In column 1 of Table 38, the ratios decrease with increasing altitude. W. O. Pruitt (personal communication) suggests that altitude compensation for the FAO Pan Evaporation method was omitted from the computer program and the Reference Crop evapotranspiration should be increased by 10 percent per 1000 feet of elevation above 3000 feet. Columns (3) and (4) of Table 39 show such a correction. However, with this correction, a modification of the FAO crop coefficients (kc) would also need to be made since the

TABLE 38. PERCENTAGE DIFFERENCE BETWEEN FALLON AND OTHER LOCATIONS DETERMINED BY RATIOS OF ACTUAL PAN EVAPORATION TO REFERENCE CROP EVAPOTRANSPIRATION

LOCATION	(1) RATIO[1] R	(2) RATIO[2] PAN	(3) DIFFERENCE[3] (%)
Fallon	1.28	1.26	0.00
Fernley	-[4]	-[4]	-[4]
Carson Valley	1.24	1.25	3.13
Lovelock	1.17	1.26	8.59
Elko	0.99	1.26	22.66
Diamond Valley	0.92	1.26	28.13
Pahrump	1.42	1.36	-[5]

[1] The ratio, R = average of: actual pan evaporation/ET_o for each location using the FAO Blaney-Criddle, Radiation, Penman and corrected Penman methods.

[2] Same as above only using FAO pan evaporation method.

[3] Correction needed to bring ET_o up to Fallon values for each location.

[4] No data available

[5] Percentage difference was not calculated since the elevation of the Pahrump Valley is 2600 feet.

TABLE 39. COMPARISON OF POSSIBLE FAO PAN EVAPORATION METHOD CORRECTIONS FOR EACH LOCATION

LOCATION (years)[2]	(1) ET_o[1]	(2) ET_{crop}[1]	(3) ET_{crop}[3]	(4) ET_{crop}[4]	(5) ET_{crop}[5]	(6) ET_{crop}[6]
	inches					
Carson Valley (1974-1976)	49.75	42.49	45.40	49.74	47.11	43.82
Fernley (1973-1975)	55.45	47.13	47.58	51.84	47.13	47.13
Fallon (1974-1977)	57.14	48.57	49.02	53.43	48.57	48.57
Lovelock (1976-1977)	44.65	37.96	38.31	41.76	37.96	41.22
Elko (1976-1977)	37.07	31.51	36.15	39.39	38.60	38.65
Diamond Valley (1976-1977)	35.40	30.09	35.90	39.12	39.12	38.55
Pahrump (1974-1977)	74.37	74.37	74.37	74.37	74.37	74.37

[1] FAO pan evaporation method average annual values for respective years.

[2] Years of evaluated data are inclusive (ie. 1974-1976 = 1974, 1975, 1976).

[3] Column 1 + 10%/1000 ft. elevation above 3000 ft, with a modified crop coefficient reflecting the same criterion (kc = .78).

[4] Column 2 + 10%/1000 ft. elevation above 3000 ft. with original crop coefficient (kc = .85).

[5] Column 2 + 15%/1000 ft. elevation above 4000 ft. with original crop coefficient (kc = .85).

[6] Column 2 + percentage difference between Fallon and other locations (Table 35).

elevation of Fallon is 4000 feet. Therefore, an alternative scheme was developed to avoid changing the coefficients. This scheme involves a 15 percent increase in Reference Crop evapotranspiration for each 1000 feet above 4000 feet elevation (column 5, Table 39). When compared with the percentage differences obtained from Table 38, this correction seems feasible. Further research of the evaporation pan and its environment (i.e. heat transfer and storage relationships) could reveal possible explanations for the differences obtained between the Modified Pan Evaporation and the other FAO modified methods.

Figure 15 shows the FAO Modified methods with the addition of the Technical Release-21 Method. For all locations the Technical Release-21 method is the most conservative estimate.

A major concern of any organization requiring consumptive use estimations, is the complexity of the formulas and the corresponding difficulty in using them (Christiansen, 1966). In most cases, formulas involve climatic data that are not readily available. The Blaney-Criddle methods (Original and Technical Release-21) are by far the easiest to apply since temperature data are easily obtained. Most of the other data required for the remaining methods (Humidity, Wind, Solar Radiation, Pan Evaporation, etc.) are frequently limited to areas of research and can be difficult to obtain.

The Technical Release-21 method is the easiest to apply and is widely used in the West by the Soil Conservation Service. However, the estimations obtained in Nevada indicate that the Technical Release-21 values are underestimations as compared to the FAO Modified methods. Fallon, for example, showed an average annual estimate of 36.25 inches for the Technical Release-21 method. The FAO Modified methods, Blaney-

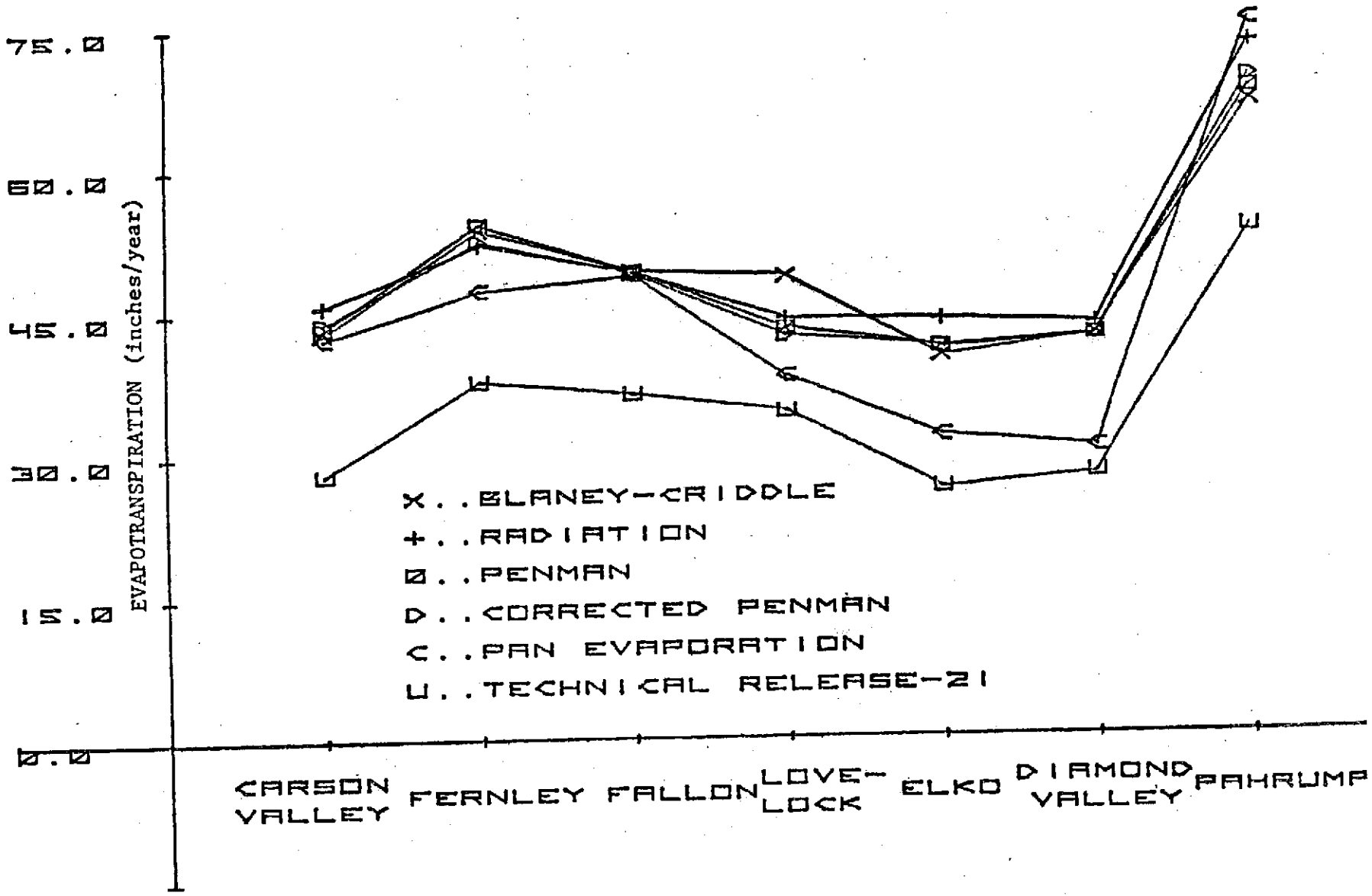

Figure 15. Average Annual ET for Seven Locations Using the FAO Modified Methods and Technical Release-21

Criddle, Radiation, Penman, Corrected Penman and Pan Evaporation, estimated the consumptive use to be 48.97, 48.81, 48.89, 48.69 and 48.57 inches, respectively. Using actual evapotranspiration measured from lysimeters managed for maximum production, resulted in an average of 48.90 inches which is 12.65 inches greater than Technical Release-21 estimates. Data from other locations resulted in similar differences.

The Standard methods offered a wide range of evapotranspiration estimates. For the Standard Blaney-Criddle, Hargreaves, Hargreaves Adjusted, Penman, Jensen-Haise and Pan Evaporation methods (K = 1.00), the evapotranspiration estimates were 53.15, 75.93, 85.65, 64.30, 65.53 and 71.87 inches for Fallon, respectively. With the exception of the Blaney-Criddle method, the remaining standard methods are more difficult to apply and used data that required more personal judgment on the part of the user than was justifiable. The Standard methods, therefore, appear too limited as an estimator of actual consumptive use.

Due to the "cookbook" style of the procedures and the flexibility of the computer program, the FAO Modified methods permitted the use of more limited data that were readily available and required a minimum of personal judgment.

Therefore, based upon the results established in this study, the methods as a group that prove to be the most reliable in predicting consumptive use in Nevada are the FAO Modified methods.

The FAO estimates without the crop coefficients (kc) estimated more reliably than the Standard methods. The FAO Modified methods consistently over-estimated actual or measured evapotranspiration by an average of 13 percent, while the Standard methods, excepting Blaney-Criddle, over-estimated by an average of 32 percent.

These methods (FAO) when corrected with crop coefficients for Western, Central and Northern Nevada may provide a more precise estimation of consumptive use for these regions of the state. Based upon experience in the Imperial Valley, CA, the FAO Modified methods may not require crop coefficient corrections to reliably estimate consumptive use for the Southern portion of Nevada.

Chapter V

RECOMMENDATIONS

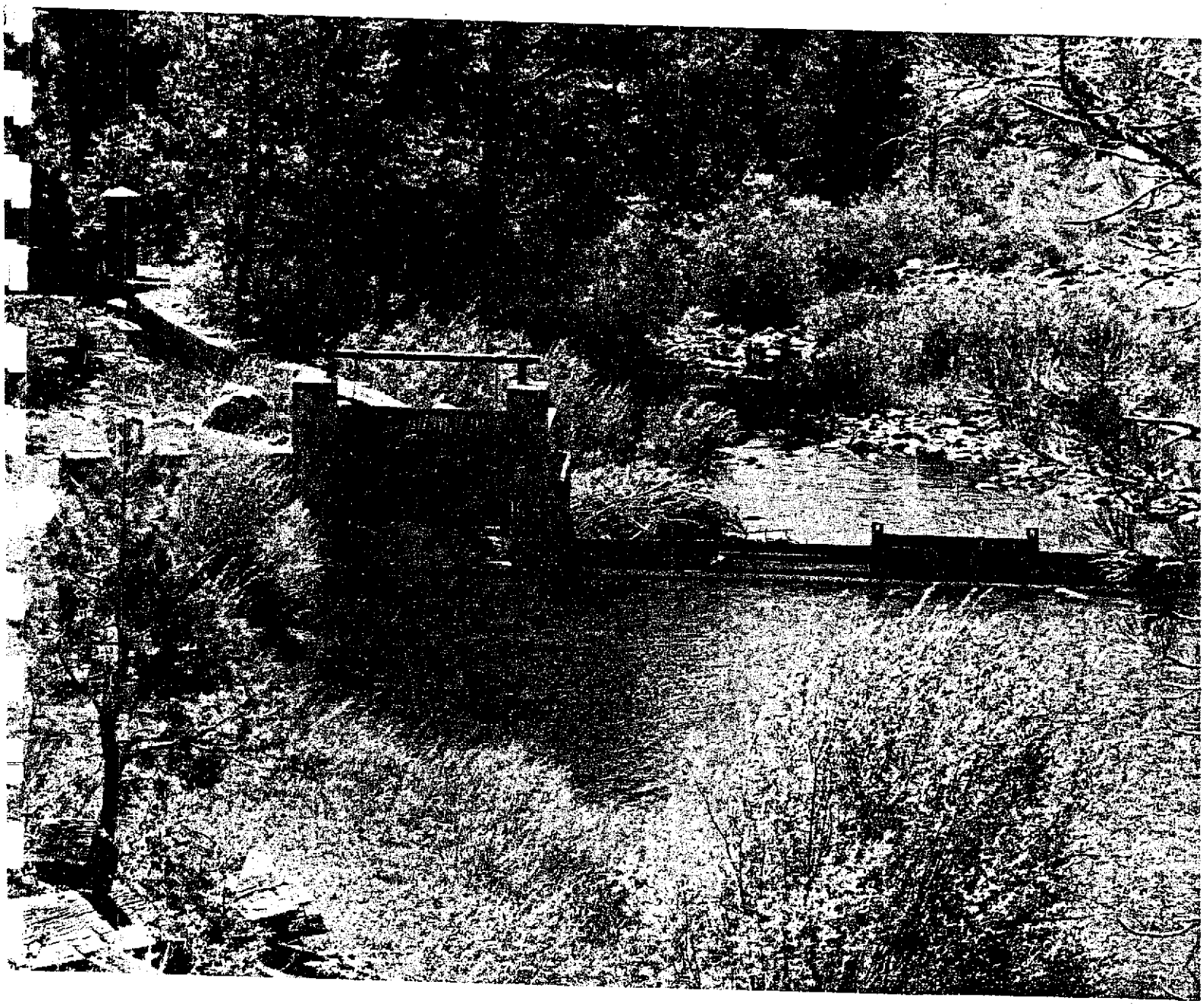

Photo by R. E. WALSTROM

Efficient Water Management Begins Here

CHAPTER IV

RECOMMENDATIONS

To further understand the diversity of Nevada's consumptive use and irrigation water requirements, it is recommended that weather stations in other locations, for example, Winnemucca, Ely, Las Vegas Valley and Caliente, be established.

Based upon the results obtained in this study, it is recommended that the Technical Release-21 method should not be used in Nevada to estimate consumptive use requirements on an annual basis.

Development of crop coefficients specifically designed to correct the other standard methods to Nevada.

Installation of lysimeters in the Pahrump Valley would help in the calibration of the various methods to the Southern portion of the state.

Collection of missing data, for example, evaporation pan temperatures and day/night wind ratios that would increase the accuracy and reliability of the empirical methodologies.

It is also recommended that a comprehensive study of the evaporation pans and their environment be studied to possibly correct the discrepancies found with the FAO Pan Evaporation method in Elko and Diamond Valley, Nevada.

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APPENDIX A

Reference Crop Evapotranspiration Tables

TABLE 40. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)*
USING FAO MODIFIED BLANEY CRIDDLE METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	0.57	0.73	0.69	1.03	1.03	1.10	0.68	0.81	0.88	0.76	0.86	0.89	0.84
Feb	1.37	1.72	1.35	1.19	1.34	1.31	0.77	1.20	1.21	1.11	1.42	1.29	1.27
Mar	2.63	2.96	2.46	2.34	2.09	2.59	2.46	2.58	2.69	2.48	2.54	2.58	2.53
Apr	3.76	4.54	3.57	2.94	2.92	3.12	3.96	4.08	4.53	3.55	3.85	3.74	3.71
May	5.83	6.85	5.85	6.00	6.20	6.42	6.00	6.04	6.39	5.94	6.36	6.22	6.18
Jun	7.76	8.21	7.59	6.84	7.11	7.06	7.26	7.28	7.76	7.29	7.53	7.47	7.43
Jul	7.33	7.70	7.43	8.17	8.14	8.07	7.07	7.14	7.45	7.52	7.66	7.65	7.61
Aug	6.52	7.02	6.82	6.88	6.55	6.95	7.02	6.53	7.42	6.81	6.70	7.06	6.86
Sep	5.00	5.04	5.17	4.78	4.81	4.98	4.67	4.85	5.07	4.82	4.90	5.07	4.93
Oct	2.27	2.36	2.34	2.34	2.66	2.75	2.77	2.85	3.01	2.46	2.62	2.70	2.59
Nov	1.37	1.55	1.62	1.01	1.37	1.38	0.98	1.23	1.21	1.12	1.38	1.40	1.30
Dec	0.25	0.34	0.31	0.48	0.44	0.53	0.06	0.12	0.33	0.26	0.30	0.39	0.32
Total	44.66	49.02	45.20	44.00	44.66	46.26	43.70	44.71	47.95	44.12	46.13	46.47	45.57

*Reference crop evapotranspiration

TABLE 41. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)*
USING FAO RADIATION METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	1.30	1.39	1.34	1.68	1.59	1.61	1.30	1.35	1.37	1.43	1.44	1.44	1.44
Feb	2.17	2.35	2.20	2.04	1.99	1.97	1.51	1.69	1.69	1.91	2.01	1.95	1.96
Mar	3.63	3.91	3.64	3.26	2.96	3.20	3.99	4.09	4.10	3.63	3.65	3.65	3.64
Apr	5.41	5.78	5.44	4.45	4.22	4.32	5.93	6.02	6.26	5.26	5.34	5.34	5.31
May	7.31	7.73	7.31	7.28	7.40	7.52	7.95	8.11	8.22	7.51	7.75	7.68	7.65
Jun	8.75	8.64	8.33	8.01	8.16	8.15	8.07	8.17	8.43	8.28	8.32	8.30	8.30
Jul	7.72	7.59	7.48	9.12	8.79	8.74	7.10	7.23	7.42	7.98	7.87	7.88	7.91
Aug	7.22	7.18	7.13	7.53	7.25	7.41	7.66	7.55	7.93	7.47	7.33	7.49	7.43
Sep	5.37	5.20	5.32	4.85	4.88	4.94	4.62	4.77	4.88	4.95	4.95	5.05	4.98
Oct	2.66	2.58	2.57	2.64	2.77	2.80	2.87	2.95	2.97	2.72	2.77	2.78	2.76
Nov	1.53	1.52	1.54	1.54	1.68	1.66	1.24	1.35	1.32	1.44	1.52	1.51	1.49
Dec	0.78	0.75	0.74	1.07	1.06	1.09	0.68	0.70	0.75	0.84	0.84	0.86	0.85
Total	53.85	54.62	53.04	53.47	52.75	53.41	52.92	53.98	55.34	53.41	53.78	53.93	53.71

*Reference crop evapotranspiration

TABLE 42. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)* USING FAO MODIFIED PENMAN METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	1.62	1.93	1.82	2.04	1.86	2.04	1.37	1.42	1.52	1.68	1.74	1.79	1.74
Feb	2.08	2.61	2.18	2.31	2.15	2.25	1.88	2.16	2.51	2.09	2.31	2.31	2.24
Mar	3.31	3.83	3.48	3.69	3.15	3.76	3.48	3.62	3.70	3.49	3.53	3.65	3.56
Apr	4.31	4.94	4.37	4.27	3.94	4.13	4.92	5.08	5.40	4.50	4.65	4.63	4.60
May	5.89	6.56	6.00	6.13	6.24	6.38	6.56	6.79	6.94	6.19	6.53	6.44	6.39
Jun	7.20	7.25	6.95	6.54	6.78	6.79	6.85	6.96	7.23	6.86	7.00	6.99	6.95
Jul	6.84	6.71	6.66	7.41	7.24	7.31	6.32	6.56	6.66	6.86	6.84	6.88	6.86
Aug	6.20	6.13	6.18	6.25	6.11	6.21	6.33	6.39	6.52	6.26	6.21	6.30	6.26
Sep	4.68	4.48	4.67	4.24	4.26	4.42	4.17	4.41	4.60	4.36	4.38	4.56	4.44
Oct	2.82	2.64	2.68	2.80	2.94	3.18	2.81	2.91	3.02	2.81	2.83	2.96	2.87
Nov	2.30	2.14	2.25	1.83	2.05	2.22	1.57	1.88	1.82	1.90	2.02	2.10	2.01
Dec	1.66	1.50	1.56	1.28	1.28	1.48	1.17	1.17	1.31	1.37	1.32	1.45	1.38
Total	48.91	50.72	48.80	48.79	48.00	50.17	47.43	49.35	51.23	48.38	49.36	50.07	49.27

*Reference crop evapotranspiration

TABLE 43. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)* USING FAO CORRECTED PENMAN METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	1.51	1.77	1.66	1.85	1.70	1.82	1.33	1.38	1.46	1.56	1.62	1.65	1.61
Feb	2.05	2.51	2.14	2.14	2.04	2.08	1.72	1.98	2.17	1.97	2.18	2.13	2.09
Mar	3.44	3.90	3.56	3.54	3.10	3.58	3.73	3.85	3.93	3.57	3.62	3.69	3.63
Apr	4.79	5.49	4.86	4.55	4.30	4.45	5.51	5.69	6.06	4.95	5.16	5.12	5.08
May	6.57	7.37	6.72	7.16	7.31	7.51	7.57	7.86	8.01	7.10	7.51	7.41	7.34
Jun	8.03	8.18	7.84	7.65	7.95	8.01	8.12	8.25	8.59	7.93	8.13	8.15	8.07
Jul	7.47	7.45	7.40	8.52	8.46	8.60	7.16	7.48	7.56	7.72	7.80	7.85	7.79
Aug	6.76	6.78	6.84	7.12	7.01	7.11	7.39	7.50	7.56	7.09	7.10	7.17	7.12
Sep	5.00	4.83	5.02	4.60	4.62	4.79	4.48	4.73	4.94	4.69	4.73	4.92	4.78
Oct	2.78	2.64	2.67	2.72	2.86	3.03	2.88	2.98	3.08	2.79	2.83	2.93	2.85
Nov	2.10	1.99	2.08	1.72	1.91	2.04	1.53	1.81	1.73	1.78	1.90	1.95	1.88
Dec	1.48	1.35	1.38	1.22	1.21	1.36	1.10	1.11	1.22	1.27	1.22	1.32	1.27
Total	51.98	54.26	52.17	52.79	52.47	54.38	52.52	54.62	56.31	52.43	53.78	54.29	53.50

*Reference crop evapotranspiration

TABLE 44. CARSON VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)* USING FAO MODIFIED PAN EVAPORATION METHOD

Month	1974			1975			1976			AVERAGE			Three year ave
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	1.16	1.32	1.41	0.84	1.16	0.85	0.77	0.98	1.08	0.92	1.15	1.11	1.06
Feb	1.84	1.90	2.10	1.62	1.93	1.80	1.02	1.16	1.30	1.49	1.66	1.73	1.63
Mar	3.70	3.56	4.03	1.30	1.56	1.40	4.16	4.36	4.35	3.05	3.16	3.26	3.16
Apr	5.26	5.37	5.54	3.58	3.98	4.05	5.09	5.86	5.52	4.64	5.07	5.04	4.92
May	7.28	7.19	7.28	6.06	6.64	6.40	6.82	7.29	6.81	6.72	7.04	6.83	6.86
Jun	7.22	8.25	7.55	6.90	7.68	6.98	7.73	8.31	7.69	7.28	8.08	7.41	7.59
Jul	6.47	7.50	7.48	7.50	8.38	7.76	7.41	7.57	6.38	7.13	7.82	7.21	7.38
Aug	7.11	7.74	7.19	6.38	6.98	6.27	6.28	6.21	6.09	6.59	6.98	6.52	6.69
Sep	5.12	5.50	5.38	4.73	4.98	5.07	4.56	3.95	4.02	4.80	4.81	4.82	4.81
Oct	2.43	2.90	2.98	2.92	2.92	3.32	2.89	3.14	3.11	2.75	2.99	3.14	2.96
Nov	1.52	1.80	1.92	1.88	2.50	2.05	1.46	1.64	1.69	1.62	1.98	1.89	1.83
Dec	0.76	0.70	0.79	0.79	0.91	1.05	0.86	0.92	0.85	0.80	0.84	0.90	0.85
Total	49.87	53.73	53.65	44.50	49.62	47.00	49.05	51.39	48.89	47.81	51.58	49.85	49.75

*Reference crop evapotranspiration

TABLE 45. CARSON VALLEY AVERAGE MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITHOUT CORRECTION (1974, 1975, 1976).

Month	Location			Three Year Ave. (in)
	Sarman Ranch (in)	Witt Ranch (in)	Heritage Ranch (in)	
Jan	1.09	1.00	1.04	1.04
Feb	1.61	1.54	1.61	1.59
Mar	3.15	3.16	3.27	3.19
Apr	4.83	4.77	4.99	4.86
May	8.23	8.59	8.51	8.44
Jun	9.67	9.95	9.79	9.80
Jul	9.74	10.08	10.00	9.94
Aug	8.54	8.70	8.75	8.66
Sep	5.84	5.77	6.07	5.89
Oct	3.05	3.05	3.28	3.13
Nov	1.40	1.38	1.43	1.40
Dec	0.80	0.79	0.83	0.81
TOTAL	57.97	58.78	59.56	58.77

TABLE 46. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR FERNLEY USING THE FAO MODIFIED METHODS.

Month	Blaney-Criddle			Radiation			Penman			Corrected Penman			Pan Evaporation		
	1973 (in)	1974 (in)	1975 (in)	1973 (in)	1974 (in)	1975 (in)	1973 (in)	1974 (in)	1975 (in)	1973 (in)	1974 (in)	1975 (in)	1973 (in)	1974 (in)	1975 (in)
Jan	0.36	1.22	1.46	1.02	2.08	2.06	1.51	2.42	2.06	1.42	2.29	1.98	0.43	1.41	1.15
Feb	1.49	2.94	1.65	2.12	3.57	2.24	2.41	4.21	2.27	2.31	4.14	2.24	1.44	2.38	2.15
Mar	3.01	4.06	3.27	3.39	5.33	3.81	4.35	5.19	4.77	4.32	5.44	4.85	3.10	4.62	3.74
Apr	4.42	6.10	4.01	5.05	8.10	4.94	5.53	7.79	5.29	5.74	7.50	5.64	5.93	5.46	4.58
May	6.79	8.81	7.18	6.74	11.90	7.42	7.08	10.07	7.48	7.62	9.87	8.32	6.90	7.10	7.26
Jun	8.72	9.61	9.33	8.10	9.67	8.64	8.44	9.16	9.19	8.77	10.14	10.19	9.01	9.43	8.88
Jul	9.63	8.73	9.76	8.80	8.20	9.11	8.44	8.03	8.65	9.09	8.85	9.45	8.20	7.26	9.47
Aug	8.40	7.76	8.26	8.15	7.55	8.24	7.73	7.33	7.66	8.29	8.06	7.50	7.48	7.93	6.87
Sep	5.35	5.25	6.04	5.13	5.36	6.26	5.31	4.64	5.48	5.44	5.00	5.21	4.92	5.25	5.29
Oct	3.45	3.00	3.85	3.35	3.04	3.82	3.76	3.10	4.35	3.78	3.14	4.01	3.27	3.50	3.34
Nov	1.67	1.62	1.47	1.97	1.91	1.92	2.15	2.13	1.94	2.05	2.08	1.91	2.13	1.97	1.74
Dec	0.65	0.56	0.40	1.33	1.19	1.30	1.49	1.50	1.22	1.46	1.43	1.20	1.01	0.67	1.04
Total	53.94	59.66	56.68	55.15	67.90	59.76	58.20	65.57	60.36	60.29	67.94	62.50	53.82	56.98	55.51

[1]Reference crop evapotranspiration.

TABLE 47. AVERAGE[1] MONTHLY EVAPOTRANSPIRATION (ET_o)[2] FOR FERNLEY USING THE FAO MODIFIED METHODS.

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	1.01	1.72	2.00	1.90	1.00
Feb	2.03	2.64	2.96	2.90	1.99
Mar	3.45	4.18	4.77	4.87	3.82
Apr	4.84	6.03	6.20	6.29	5.32
May	7.59	8.69	8.21	8.60	7.09
Jun	9.22	8.80	8.93	9.70	9.11
Jul	9.37	8.70	8.37	9.13	8.31
Aug	8.14	7.98	7.57	7.95	7.43
Sep	5.55	5.58	5.14	5.22	5.15
Oct	3.43	3.40	3.74	3.64	3.37
Nov	1.59	1.93	2.07	2.01	1.95
Dec	0.54	1.27	1.40	1.36	0.91
Total	56.76	60.92	61.36	63.57	55.45

[1]Three year average (1973, 1974, 1975).
[2]Reference crop evapotranspiration.

TABLE 48. AVERAGE[1] MONTHLY EVAPOTRANSPIRATION (ET_o)[2] FOR THE NEWLANDS FIELD LABORATORY USING THE FAO MODIFIED METHODS.

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.58	1.38	1.26	1.23	1.01
Feb	1.66	2.26	2.56	2.48	2.09
Mar	3.26	4.10	4.45	4.61	4.40
Apr	5.05	6.06	6.03	6.46	5.65
May	6.97	8.21	7.52	8.27	7.47
Jun	8.53	8.65	8.06	8.94	8.65
Jul	8.95	8.68	7.93	8.68	8.86
Aug	7.32	7.31	6.69	7.37	7.28
Sep	5.11	5.06	4.68	4.99	5.31
Oct	3.11	3.16	3.25	3.33	3.52
Nov	1.21	1.55	1.83	1.78	1.94
Dec	0.35	1.03	1.31	1.25	0.97
Total	52.10	57.42	55.56	59.38	57.14

[1]Four year average (1974, 1975, 1976, 1977).
[2]Reference crop evapotranspiration.

TABLE 49. NEWLANDS FIELD LABORATORY (FALLON) MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITHOUT CORRECTION[1] (1974-1977).

Month	1974 (in)	1975 (in)	1976 (in)	1977 (in)	Average (in)
Jan	1.36	1.29	1.16	0.75	1.14
Feb	2.36	1.80	1.59	1.80	1.89
Mar	4.91	3.05	3.40	3.16	3.63
Apr	6.54	4.35	5.08	6.29	5.57
May	11.08	7.65	10.58	6.80	9.03
Jun	11.97	10.09	10.46	10.39	10.73
Jul	10.74	11.55	11.17	11.81	11.32
Aug	9.63	9.12	7.90	9.19	8.96
Sep	7.08	6.97	5.88	6.39	6.58
Oct	3.92	3.90	3.82	3.80	3.86
Nov	1.97	1.87	1.62	1.66	1.78
Dec	1.00	1.26	0.61	1.33	1.05
TOTAL	72.56	62.90	63.27	63.37	65.53

[1]Values represent potential evapotranspiration of tall alfalfa without harvest influences (crop consumptive use Technical Committee Meeting, Sept, 1978).

TABLE 50. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO MODIFIED BLANEY CRIDDLE METHOD

Month	1976		1977		Average	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	0.80	0.91	-0.02	0.30	0.39	0.61
Feb	1.47	1.93	1.64	2.04	1.56	1.99
Mar	2.50	3.00	3.34	3.20	2.92	3.10
Apr	3.68	4.32	5.24	4.92	4.46	4.62
May	6.99	7.67	5.06	5.15	6.03	6.41
Jun	7.20	8.07	8.48	8.43	7.84	8.25
Jul	8.31	8.58	8.07	9.26	8.19	8.92
Aug	7.96	8.34	8.02	7.99	7.99	8.17
Sep	5.19	5.82	5.22	5.00	5.21	5.41
Oct	3.27	3.64	3.90	3.81	3.59	3.73
Nov	1.26	1.52	1.21	1.18	1.24	1.35
Dec	-0.16	0.13	0.78	0.68	0.31	0.41
Total	48.47	53.93	50.94	51.86	49.71	52.90

[1]Reference crop evapotranspiration
[2]Carpenter Ranch
[3]Ruddle Ranch

TABLE 51. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO RADIATION METHOD

Month	1976		1977		Average	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	1.27	1.37	1.02	1.22	1.15	1.30
Feb	2.03	2.30	2.01	2.23	2.02	2.27
Mar	3.64	3.99	3.85	3.78	3.75	3.89
Apr	4.70	5.25	5.84	5.69	5.27	5.47
May	7.41	8.01	5.47	5.59	6.44	6.80
Jun	7.25	7.92	6.42	6.49	6.84	7.21
Jul	7.62	7.93	7.42	8.08	7.52	8.01
Aug	6.58	7.07	7.17	7.22	6.88	7.15
Sep	4.52	4.99	4.49	4.47	4.51	4.73
Oct	3.31	3.63	3.75	3.84	3.53	3.74
Nov	1.43	1.59	1.70	1.70	1.57	1.65
Dec	0.88	1.03	0.83	0.78	0.86	0.90
Total	50.64	55.07	49.97	51.09	50.31	53.08

[1]Reference crop evapotranspiration
[2]Carpenter Ranch
[3]Ruddle Ranch

TABLE 52. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o) USING FAO MODIFIED PENMAN METHOD

Month	1976		1977		Average	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	1.33	1.51	0.89	1.21	1.11	1.36
Feb	2.39	2.91	2.08	2.36	2.24	2.64
Mar	3.57	4.12	4.18	4.03	3.88	4.08
Apr	4.94	5.75	5.63	5.38	5.29	5.57
May	6.60	7.39	5.19	5.42	5.90	6.41
Jun	6.30	7.14	5.68	5.99	5.99	6.57
Jul	6.59	6.98	6.01	7.09	6.30	7.04
Aug	6.12	6.67	6.61	6.67	6.37	6.67
Sep	4.15	4.77	4.09	4.08	4.12	4.43
Oct	2.70	3.12	3.41	3.56	3.06	3.34
Nov	1.14	1.45	1.84	1.88	1.49	1.67
Dec	0.60	0.83	1.48	1.33	1.04	1.08
Total	46.43	51.64	47.09	49.00	46.76	50.82

[1]Reference crop evapotranspiration
[2]Carpenter Ranch
[3]Ruddle Ranch

TABLE 53. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO CORRECTED PENMAN METHOD

Month	1976		1977		Average	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	1.24	1.41	0.86	1.15	1.05	1.28
Feb	2.23	2.70	2.02	2.28	2.13	2.49
Mar	3.67	4.15	4.19	4.06	3.93	4.11
Apr	5.24	5.99	6.09	5.83	5.67	5.91
May	7.38	8.10	5.59	5.81	6.49	6.96
Jun	7.06	7.92	6.17	6.50	6.62	7.21
Jul	7.30	7.65	6.64	7.81	6.97	7.73
Aug	6.61	7.04	7.24	7.31	6.93	7.18
Sep	4.31	4.85	4.24	4.20	4.28	4.53
Oct	2.75	3.11	3.42	3.54	3.09	3.33
Nov	1.12	1.39	1.75	1.78	1.44	1.59
Dec	0.59	0.80	1.32	1.20	0.96	1.00
Total	49.50	55.11	49.53	51.47	49.52	53.29

[1]Reference crop evapotranspiration
[2]Carpenter Ranch
[3]Ruddle Ranch

TABLE 54. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION (ET_o)[1] USING FAO MODIFIED PAN EVAPORATION METHOD

Month	1976		1977		Average	
	Lower[2] Valley (in)	Upper[3] Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	0.76	0.74	0.41	0.96	0.59	0.85
Feb	2.11	2.06	1.56	1.59	1.84	1.83
Mar	3.94	3.80	4.40	4.19	4.17	4.00
Apr	4.58	4.39	6.47	6.08	5.53	5.24
May	5.94	5.74	4.36	5.00	5.15	5.37
Jun	5.25	5.10	6.44	5.10	5.85	5.10
Jul	6.27	6.14	7.07	6.53	6.67	6.34
Aug	5.97	5.76	5.78	5.47	5.88	5.62
Sep	3.50	3.39	4.80	4.38	4.15	3.89
Oct	2.78	2.66	3.48	3.80	3.13	3.23
Nov	1.55	1.51	1.70	1.57	1.63	1.54
Dec	0.76	0.75	1.05	0.95	0.91	0.85
Total	43.41	42.04	47.52	45.62	45.47	43.83

[1]Reference crop evapotranspiration
[2]Carpenter Ranch
[3]Ruddle Ranch

TABLE 55. LOVELOCK VALLEY MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITHOUT CORRECTION (1976, 1977).

Month	1976		1977		Average	
	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)	Lower Valley (in)	Upper Valley (in)
Jan	1.00	1.16	0.99	1.02	1.00	1.09
Feb	1.87	1.93	1.60	1.67	1.74	1.80
Mar	3.32	3.43	2.96	2.96	3.14	3.20
Apr	4.97	5.15	5.75	5.75	5.36	5.45
May	8.49	8.80	5.49	5.39	6.99	7.10
Jun	8.52	9.16	7.84	7.79	8.18	8.48
Jul	9.97	10.20	10.08	10.22	10.03	10.21
Aug	7.64	8.01	8.73	8.79	8.19	8.40
Sep	5.40	5.89	5.34	5.43	5.37	5.66
Oct	3.55	3.85	4.17	4.19	3.86	4.02
Nov	1.82	1.82	1.68	1.86	1.75	1.84
Dec	0.69	0.81	0.97	0.93	0.83	0.87
TOTAL	57.24	60.21	55.60	56.00	56.42	58.11

TABLE 56. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR ELKO[2] USING THE FAO MODIFIED METHODS

Month	BLANEY-CRIDDLE		RADIATION		PENMAN		CORR. PENMAN		PAN EVAPORATION	
	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)
Jan	0.37	-0.96	1.41	0.76	1.38	0.77	1.30	0.75	0.77	1.85
Feb	0.90	0.64	1.71	1.66	2.23	1.63	2.02	1.59	0.69	0.22
Mar	2.19	1.16	3.37	2.64	3.24	2.76	3.31	2.78	0.77	0.07
Apr	3.36	4.64	4.61	5.94	4.35	5.01	4.64	5.59	3.28	1.08
May	6.96	4.98	7.78	5.65	6.92	5.38	7.70	5.84	5.31	3.79
Jun	7.29	7.10	7.95	7.10	6.91	6.39	7.74	7.10	6.92	6.29
Jul	8.78	7.61	8.91	8.35	7.56	6.86	8.45	7.66	6.46	7.16
Aug	7.42	6.75	7.22	6.48	6.54	5.85	7.15	6.39	5.50	5.53
Sep	4.83	4.51	4.63	5.60	4.58	4.64	4.74	5.05	3.69	5.04
Oct	2.60	2.81	3.26	3.20	2.71	2.59	2.80	2.65	2.66	2.75
Nov	0.78	0.44	1.56	1.13	1.43	1.22	1.41	1.19	1.09	1.11
Dec	-0.42	0.00	0.85	0.95	0.87	0.86	0.84	0.84	1.08	1.03
Total	45.06	39.68	53.26	49.46	48.72	43.96	52.10	47.43	38.22	35.92

[1]Reference crop evapotranspiration.

[2]Halleck weather station.

TABLE 57. AVERAGE[1] MONTHLY EVAPOTRANSPIRATION (ET_o)[2] FOR ELKO[3] USING THE FAO MODIFIED METHODS.

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corr. Penman (in)	Pan Evaporation (in)
Jan	-0.30	1.09	1.08	1.03	1.31
Feb	0.77	1.69	1.93	1.81	0.46
Mar	1.68	3.01	3.00	3.05	0.42
Apr	4.00	5.28	4.68	5.12	2.18
May	5.97	6.72	6.15	6.77	4.55
Jun	7.20	7.53	6.65	7.42	6.61
Jul	8.20	8.63	7.21	8.06	6.81
Aug	7.09	6.85	6.20	6.77	5.52
Sep	4.67	5.12	4.61	4.90	4.37
Oct	2.71	3.23	2.65	2.73	2.71
Nov	0.61	1.35	1.33	1.30	1.10
Dec	-0.21	0.90	0.87	0.84	1.06
Total	42.37	51.36	46.34	49.77	37.07

[1]Two year average (1976, 1977).

[2]Reference crop evapotranspiration.

[3]Halleck weather station.

TABLE 58. ELKO AND DIAMOND VALLEY MONTHLY EVAPOTRANSPIRATION USING THE JENSEN-HAISE METHOD WITHOUT CORRECTION[1] (1976, 1977).

Month	ELKO			DIAMOND VALLEY		
	1976 (in)	1977 (in)	Ave (in)	1976 (in)	1977 (in)	Ave (in)
Jan	0.95	0.33	0.64	1.01	0.68	0.85
Feb	1.48	1.24	1.36	1.74	1.80	1.77
Mar	2.75	1.70	2.23	3.02	2.90	2.96
Apr	4.75	4.41	4.58	5.17	7.01	6.09
May	8.47	5.26	6.87	9.91	6.21	8.06
Jun	9.30	9.19	9.25	11.51	11.25	11.38
Jul	11.72	11.21	11.47	12.05	13.39	12.72
Aug	8.57	8.52	8.55	10.12	10.75	10.44
Sep	6.34	7.51	6.93	6.51	7.64	7.08
Oct	3.53	3.76	3.65	3.65	4.89	4.27
Nov	1.65	1.57	1.61	1.86	1.79	1.83
Dec	0.45	1.14	0.80	0.77	1.17	0.97
TOTAL	59.96	55.84	57.90	67.32	69.48	68.40

[1]Values represent potential evapotranspiration of tall alfalfa without harvest influences (Crop Consumptive Use Technical Committee Meeting, Sept, 1978).

TABLE 59. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR DIAMOND VALLEY[2] USING FAO MODIFIED METHODS.

Month	Blaney-Criddle		Radiation		Penman		Corrected Penman		Pan Evaporation	
	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)	1976 (in)	1977 (in)
Jan	-0.18	-0.33	0.92	0.77	0.98	0.95	0.95	0.93	0.74	0.58
Feb	0.73	1.21	1.64	1.79	1.88	1.87	1.80	1.82	0.67	0.99
Mar	2.38	1.96	3.44	3.15	3.43	3.17	3.53	3.24	2.29	0.74
Apr	4.39	5.06	5.08	6.21	4.95	5.42	5.32	5.98	4.17	5.20
May	6.79	5.25	7.48	5.94	6.51	5.62	7.31	6.13	6.12	4.17
Jun	7.68	7.67	8.09	7.49	7.15	6.72	8.06	7.50	7.00	4.87
Jul	7.77	8.28	7.71	8.55	6.87	7.24	7.64	8.10	4.88	5.47
Aug	7.12	7.26	7.16	6.98	6.25	6.15	6.95	6.76	5.03	4.20
Sep	3.65	4.75	3.71	4.79	3.71	4.42	3.79	4.66	2.00	3.12
Oct	2.44	3.35	2.67	3.40	2.72	3.24	2.72	3.25	2.06	3.33
Nov	1.02	1.18	1.40	1.36	1.62	2.01	1.58	1.85	0.89	1.36
Dec	-0.09	-0.12	0.88	0.63	1.11	1.18	1.06	1.08	0.48	0.43
Total	43.70	45.52	50.18	51.06	47.18	47.99	50.71	51.30	36.33	34.46

[1]Reference crop evapotranspiration.
[2]Eureka, Nevada weather station.

TABLE 60. AVERAGE[1] MONTHLY EVAPOTRANSPIRATION (ET_o)[2] FOR DIAMOND VALLEY[3] USING THE FAO MODIFIED METHODS.

Month	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	-0.26	0.85	0.97	0.94	0.66
Feb	0.97	1.72	1.88	1.81	0.83
Mar	2.17	3.30	3.30	3.39	1.52
Apr	4.73	5.65	5.19	5.65	4.69
May	6.02	6.71	6.07	6.72	5.15
Jun	7.68	7.79	6.94	7.78	5.94
Jul	8.03	8.13	7.06	7.87	5.18
Aug	7.19	7.07	6.20	6.86	4.62
Sep	4.20	4.25	4.07	4.23	2.56
Oct	2.90	3.04	2.98	2.99	2.70
Nov	1.10	1.38	1.82	1.72	1.13
Dec	-0.11	0.76	1.15	1.07	0.46
Total	44.61	50.62	47.59	51.01	35.40

[1]Two year average (1976, 1977).
[2]Reference crop evapotranspiration.
[3]Eureka, Nevada weather station.

DEFINITION OF SYMBOLS AND ABBREVIATIONS
FOR TABLES IN APPENDIX B

TMAX.....Maximum Temperature (°C)

TMIN.....Minimum Temperature (°C)

TMEAN.....Mean Temperature (°C)

TDEW.....Dew Point Temperature (°C)

RHMAX.....Maximum Relative Humidity (%)

RHMIN.....Minimum Relative Humidity (%)

RHMEAN.....Mean Relative Humidity (%)

EA.....Mean Saturation Water Vapor Pressure (mb)

ED.....Mean Actual Water Vapor Pressure (mb)

UDAY.....Mean Daytime Wind (m/sec)

U24.....24 hour Wind Total (km)

SUNHRS.....Hours of Bright Sunshine

NRATIO.....Ratio of Actual Sunshine Hours to Possible

SOLRAD.....Solar Radiation (Equivalent mm of evaporation)

RN.....Net Radiation (Equivalent mm of evaporation)

EPAN.....Mean Daily Evaporation from Class A Pan (mm)

URATIO.....Ratio of Daytime Wind to Nighttime Wind

DATE(MDY)..Week Beginning, Month, Day, Year

TABLE 61. CLIMATOLOGICAL DATA FOR SARMAN UPPER CARSON NEVADA 1974

VALUES OF FETCH 200.00,CASE A

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
1/ 2/74	1.7	-27.2	-12.8	0.0	100.	38.	69.	2.3	1.6	.4	53.1	0.00	.34	2.67	.94	.51	2.00
1/ 9/74	16.7	-20.0	-1.7	0.0	85.	30.	58.	5.4	3.1	2.7	172.2	0.00	.47	3.16	.88	.51	2.00
1/16/74	17.8	-8.9	4.4	0.0	100.	29.	65.	8.4	5.4	3.6	230.1	0.00	.36	2.91	.97	.99	2.00
1/23/74	12.2	-8.3	1.9	0.0	100.	45.	58.	7.0	4.0	1.4	93.3	0.00	.68	4.25	1.14	1.27	2.00
1/30/74	15.0	-10.0	2.5	0.0	96.	29.	53.	7.3	4.6	2.0	130.3	0.00	.76	4.86	1.41	1.62	2.00
2/ 6/74	15.0	-9.4	2.8	0.0	94.	25.	60.	7.5	4.4	1.1	72.4	0.00	1.00	6.56	2.06	1.63	2.00
2/13/74	14.4	-11.7	1.4	0.0	100.	20.	60.	7.6	4.5	1.6	103.0	0.00	.55	4.52	1.69	1.01	2.00
2/20/74	16.7	-10.6	3.1	0.0	100.	18.	59.	7.6	4.5	2.2	144.8	0.00	.77	5.83	2.15	1.07	2.00
2/27/74	13.3	-13.9	-.3	0.0	100.	24.	62.	6.0	3.7	4.0	260.7	0.00	.51	5.98	1.60	1.60	2.00
3/ 6/74	13.3	-3.3	4.7	0.0	98.	30.	64.	8.6	5.5	2.3	146.4	0.00	.65	6.12	2.66	1.07	2.00
3/13/74	19.9	-7.8	4.6	0.0	100.	22.	61.	9.1	5.5	1.2	80.5	0.00	.55	5.95	2.76	1.81	2.00
3/20/74	17.2	-7.2	5.0	0.0	100.	22.	61.	8.9	5.3	1.0	64.4	0.00	.96	8.74	3.80	1.63	2.00
3/27/74	15.7	-6.1	5.3	0.0	100.	20.	60.	9.4	5.4	4.3	278.4	0.00	.72	7.72	3.64	1.65	2.00
4/ 3/74	18.3	-6.1	6.1	0.0	100.	15.	58.	8.2	4.7	2.0	131.9	0.00	.94	9.47	4.38	2.08	2.00
4/10/74	18.3	-10.0	4.2	0.0	98.	17.	58.	8.4	4.7	1.1	72.4	0.00	.99	10.32	4.87	2.11	2.00
4/17/74	20.0	-6.1	6.9	0.0	100.	20.	60.	10.0	6.0	2.5	162.5	0.00	.95	10.49	5.13	2.53	2.00
4/24/74	22.8	-7.8	7.5	0.0	100.	32.	66.	10.4	6.9	2.0	128.7	0.00	.97	10.93	5.49	2.75	2.00
5/ 1/74	25.6	-1.1	12.2	0.0	100.	21.	61.	14.2	8.6	1.6	106.2	0.00	.97	11.29	5.75	2.80	2.00
5/ 8/74	26.7	-1.1	12.8	0.0	100.	16.	58.	14.8	8.6	1.7	109.4	0.00	.97	11.66	6.00	3.03	2.00
5/15/74	21.1	-8.3	6.4	0.0	96.	20.	58.	9.6	5.6	2.2	141.6	0.00	.88	11.29	5.89	3.27	2.00
5/22/74	28.3	-1.1	13.9	0.0	92.	28.	60.	15.9	9.5	1.4	88.5	0.00	.79	10.68	5.76	3.44	2.00
5/29/74	27.2	0.0	13.6	0.0	85.	22.	54.	15.6	8.3	1.4	93.3	0.00	.93	11.95	6.28	3.43	2.00
6/ 5/74	31.1	-2.2	14.4	0.0	84.	22.	53.	16.5	8.7	1.6	103.0	0.00	.98	12.51	6.57	3.19	2.00
6/12/74	32.9	3.9	18.1	0.0	86.	19.	53.	20.7	10.9	2.2	157.7	0.00	.87	11.78	6.36	3.98	2.00
6/19/74	28.0	1.7	15.3	0.0	86.	16.	51.	17.4	8.9	2.2	141.6	0.00	.91	12.14	6.44	3.31	2.00
6/26/74	32.2	-1.7	15.2	0.0	85.	19.	52.	17.4	9.0	1.9	125.5	0.00	.97	12.51	6.60	3.72	2.00
7/ 3/74	31.7	2.8	17.2	0.0	84.	18.	51.	19.1	10.0	1.7	111.4	0.00	.65	9.76	5.36	3.59	2.00
7/10/74	30.8	.6	14.7	0.0	85.	26.	55.	16.8	8.7	2.0	128.7	0.00	.89	11.66	6.20	3.07	2.00
7/17/74	32.2	1.7	17.2	0.0	84.	17.	51.	19.7	10.0	2.2	144.8	0.00	.92	11.78	6.19	3.15	2.00
7/24/74	32.2	7.2	19.7	0.0	84.	21.	53.	23.0	12.1	2.7	112.6	0.00	.68	9.62	5.25	2.17	2.00
7/31/74	31.1	8.9	20.0	0.0	83.	25.	54.	23.4	12.6	1.9	122.3	0.00	.54	8.26	4.61	2.69	2.00
8/ 7/74	29.4	1.1	15.3	0.0	84.	18.	52.	17.4	8.9	2.2	140.0	0.00	.90	10.93	5.56	2.07	2.00
8/14/74	29.4	-2.2	13.6	0.0	86.	18.	52.	15.6	8.1	2.2	144.8	0.00	1.00	11.66	5.85	2.52	2.00
8/21/74	30.0	.6	14.7	0.0	84.	17.	51.	16.8	8.5	1.9	122.3	0.00	.84	9.84	4.89	1.90	2.00
8/28/74	30.6	1.7	16.1	0.0	85.	20.	53.	18.3	9.6	1.9	120.7	0.00	.58	7.58	3.92	1.28	2.00
9/ 3/74	30.6	.6	15.0	0.0	85.	18.	52.	15.9	8.0	1.9	120.7	0.00	.80	8.86	4.87	1.87	2.00
9/10/74	28.9	-2.8	13.1	0.0	87.	18.	53.	15.0	7.9	2.3	148.2	0.00	.75	8.14	4.56	1.26	2.00
9/17/74	30.6	-2.8	13.9	0.0	87.	15.	51.	14.5	7.4	1.6	106.2	0.00	.75	7.77	3.56	.90	2.00
9/24/74	29.4	-4.4	12.5	0.0	87.	15.	50.	13.8	7.0	1.5	96.5	0.00	.80	7.65	3.34	.85	2.00
10/ 1/74	26.1	-7.2	9.4	0.0	86.	22.	53.	11.8	6.4	1.7	111.0	0.00	.57	5.95	2.68	.68	2.00
10/ 8/74	22.2	-5.6	8.3	0.0	84.	22.	53.	11.0	5.8	1.2	78.8	0.00	.57	5.59	2.41	.29	2.00
10/15/74	25.6	-7.2	9.2	0.0	85.	21.	53.	11.6	6.2	1.5	96.5	0.00	.56	5.22	2.14	.25	2.00
10/22/74	18.9	-8.3	5.0	0.0	88.	24.	56.	8.7	4.9	1.6	106.2	0.00	.54	4.81	1.90	.47	2.00
10/29/74	18.3	-8.3	4.9	0.0	84.	26.	56.	8.7	4.8	1.8	115.8	0.00	.20	3.04	1.47	.41	2.00
11/ 5/74	16.1	-8.3	3.9	0.0	85.	24.	55.	8.1	4.5	1.7	109.4	0.00	.43	3.76	1.41	.21	2.00
11/12/74	21.1	-9.4	5.8	0.0	83.	24.	55.	9.3	5.0	2.0	130.3	0.00	.47	3.64	1.21	.01	2.00
11/19/74	17.8	-8.3	4.7	0.0	84.	24.	55.	8.6	4.8	4.1	265.5	0.00	.43	3.28	1.01	.94	2.00
11/26/74	14.4	-11.1	1.7	0.0	83.	27.	55.	6.9	3.8	1.2	75.6	0.00	.36	2.91	.94	.87	2.00
12/ 3/74	11.7	-8.9	1.4	0.0	83.	30.	57.	6.8	3.7	2.1	136.8	0.00	.32	2.67	.87	.83	2.00
12/10/74	12.8	-10.0	.8	0.0	83.	30.	55.	6.8	3.8	1.6	104.6	0.00	.16	2.06	.83	.77	2.00
12/17/74	12.8	-11.7	.6	0.0	83.	32.	59.	6.4	3.5	2.6	167.3	0.00	.18	2.06	.79	.76	2.00
12/24/74	9.4	-11.1	-1.1	0.0	86.	32.	59.	5.6	3.3	3.0	196.3	0.00	.36	2.67	.79	.76	2.00
12/31/74	10.6	-26.7	-8.1	0.0	80.	30.	55.	3.3	1.8	2.4	152.9	0.00	.42	2.91	.86	.76	2.00

TABLE 62. CLIMATOLOGICAL DATA FOR WITT UPPER CARSON NEVADA 1974

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF EFTCH = 200.00, CASE A																	
1/ 2/74	3.9	-25.6	-10.8		86.	45.	65.	2.7	1.8	1.3	85.3	0.00	.34	2.67	.92	.48	2.00
1/ 9/74	15.0	-20.6	-2.8		85.	28.	57.	5.0	2.8	3.0	193.1	0.00	.47	3.16	.88	.48	2.00
1/16/74	17.8	-8.9	4.4		85.	20.	53.	8.4	4.4	3.6	231.7	0.00	.37	2.91	.92	1.70	2.00
1/23/74	12.2	-8.3	1.9		85.	11.	48.	7.0	3.4	1.6	101.4	0.00	.68	4.25	1.07	1.42	2.00
1/30/74	14.4	-10.6	1.9		90.	10.	50.	7.0	3.5	2.7	173.8	0.00	.77	4.86	1.32	1.95	2.00
2/ 6/74	14.4	-12.2	1.1		92.	6.	49.	6.6	3.3	1.9	122.3	0.00	1.00	6.56	1.97	2.03	2.00
2/13/74	14.2	-11.7	1.4		92.	9.	51.	6.8	3.4	2.4	157.7	0.00	.55	4.52	1.63	1.96	2.00
2/20/74	17.2	-10.0	3.6		86.	9.	46.	7.9	3.6	3.3	215.6	0.00	.77	5.83	1.99	3.45	2.00
2/27/74	12.8	-13.9	-.6		85.	12.	49.	5.9	2.9	3.9	255.8	0.00	.51	4.98	2.08	1.70	2.00
3/ 6/74	13.3	-6.1	3.6		84.	18.	51.	7.9	4.0	2.1	136.8	0.00	.65	6.12	2.57	3.15	2.00
3/13/74	19.4	-8.9	5.3		87.	9.	47.	8.9	4.2	1.5	96.5	0.00	.55	5.95	2.67	3.38	2.00
3/20/74	17.8	-8.3	5.7		87.	12.	50.	8.6	4.2	1.4	93.3	0.00	.96	8.74	3.68	4.09	2.00
3/27/74	16.7	-5.0	5.8		86.	15.	51.	9.3	4.7	3.2	204.9	0.00	.72	7.72	3.56	4.80	2.00
4/ 3/74	20.6	-5.0	7.8		100.	12.	56.	10.6	5.9	3.2	204.3	0.00	.94	9.47	4.36	5.26	2.00
4/10/74	19.4	-10.0	4.7	0	100.	15.	58.	8.6	4.9	2.2	144.8	0.00	.99	10.32	4.87	5.92	2.00
4/17/74	22.8	-4.3	9.2		100.	19.	58.	11.3	6.7	3.8	255.8	0.00	.95	10.49	5.12	6.53	2.00
4/24/74	20.0	-8.3	5.8		100.	26.	63.	9.3	5.8	2.9	189.9	0.00	.97	10.93	5.45	5.51	2.00
5/ 1/74	26.1	1.1	13.6		100.	17.	59.	15.6	9.1	2.4	157.7	0.00	.97	11.29	5.75	7.19	2.00
5/ 8/74	26.7	-.6	13.1		100.	20.	60.	15.0	9.0	3.1	202.7	0.00	.97	11.66	6.03	8.71	2.00
5/15/74	24.1	-6.1	9.0		100.	18.	59.	10.4	6.1	3.5	225.3	0.00	.88	11.29	5.90	6.45	2.00
5/22/74	30.0	5.9	17.9		100.	22.	61.	20.0	12.2	2.0	128.7	0.00	.79	10.68	5.85	7.26	2.00
5/29/74	27.8	3.9	15.8		100.	22.	61.	18.0	11.0	1.8	115.8	0.00	.93	11.95	6.44	7.37	2.00
6/ 5/74	32.8	-2.4	15.2		100.	22.	62.	17.4	10.8	1.7	112.6	0.00	.98	12.51	6.74	7.77	2.00
6/12/74	33.3	4.4	18.9		100.	22.	61.	21.8	13.3	2.5	160.9	0.00	.87	11.78	6.53	8.86	2.00
6/19/74	30.0	4.4	17.2		100.	18.	59.	19.7	11.6	2.2	162.5	0.00	.91	12.14	6.62	8.71	2.00
6/26/74	34.7	-1.9	16.4		100.	16.	58.	19.0	11.0	2.2	141.6	0.00	.97	12.51	6.73	9.47	2.00
7/ 3/74	31.7	3.0	17.3		100.	17.	59.	20.4	11.9	1.9	123.9	0.00	.65	9.76	5.47	8.56	2.00
7/10/74	30.0	5.6	17.8		98.	16.	57.	17.1	9.7	2.2	146.0	0.00	.89	11.66	6.23	7.65	2.00
7/17/74	32.8	5.8	19.3		99.	18.	59.	22.2	13.0	2.2	141.6	0.00	.92	11.78	6.38	9.63	2.00
7/24/74	33.3	7.2	21.4		98.	20.	60.	24.4	14.5	1.4	93.3	0.00	.68	9.62	5.38	6.43	2.00
7/31/74	34.4	7.2	21.6		99.	20.	60.	25.1	14.9	1.5	96.5	0.00	.54	8.26	4.70	5.82	2.00
8/ 7/74	30.6	0	15.7		96.	15.	56.	17.8	9.8	2.0	130.3	0.00	.90	10.93	5.64	8.81	2.00
8/14/74	29.4	0	14.7		100.	13.	57.	16.8	9.5	2.1	138.4	0.00	1.00	11.66	5.94	8.15	2.00
8/21/74	31.7	3.2	17.8		100.	15.	58.	20.4	11.7	1.8	119.1	0.00	.04	9.84	.85	8.15	2.00
8/28/74	31.7	3.2	16.9		100.	17.	59.	19.3	11.3	1.7	107.8	0.00	.58	7.58	.00	6.51	2.00
9/ 3/74	30.6	1.6	15.9		100.	17.	59.	17.1	10.0	2.2	140.0	0.00	.83	8.86	.38	7.74	2.00
9/10/74	31.1	-3.3	13.9		100.	18.	59.	15.9	9.4	1.7	107.8	0.00	.75	8.14	.96	7.74	2.00
9/17/74	30.0	-2.8	13.6		100.	16.	57.	15.9	9.0	1.1	72.4	0.00	.75	7.77	.64	5.00	2.00
9/24/74	30.0	-4.7	12.7		100.	21.	61.	14.8	8.6	1.6	101.4	0.00	.80	7.65	.43	5.00	2.00
10/ 1/74	27.2	-6.1	9.8		100.	25.	63.	12.1	7.3	1.5	98.1	0.00	.57	5.95	.73	3.89	2.00
10/ 8/74	23.1	-6.1	8.7		100.	28.	64.	11.2	6.7	1.2	75.6	0.00	.57	5.59	.45	2.77	2.00
10/15/74	25.6	-6.8	9.7		100.	25.	63.	12.1	7.1	1.5	93.3	0.00	.56	5.22	.18	3.93	2.00
10/22/74	19.4	-8.3	5.6		100.	38.	69.	9.1	5.7	1.6	103.0	0.00	.54	4.81	.94	2.56	2.00
10/29/74	17.8	-7.2	5.3		100.	38.	69.	8.9	5.6	2.1	133.5	0.00	.21	3.04	.49	1.37	2.00
11/ 5/74	17.2	-8.9	4.4		100.	23.	62.	8.4	5.2	1.6	104.6	0.00	.43	3.76	.44	1.60	2.00
11/12/74	21.7	-8.9	6.7		100.	21.	58.	9.6	5.5	1.9	122.3	0.00	.47	3.64	.22	2.13	2.00
11/19/74	17.8	-4.4	6.7		100.	33.	66.	9.8	5.9	3.6	233.3	0.00	.43	3.28	.03	2.62	2.00
11/26/74	15.6	-11.7	1.9		100.	12.	56.	6.9	3.9	1.2	77.2	0.00	.36	2.91	.96	1.35	2.00
12/ 3/74	12.2	-10.0	1.1		100.	30.	65.	6.6	3.9	1.8	115.8	0.00	.32	2.67	.90	1.09	2.00
12/10/74	13.3	-10.6	1.4		100.	40.	70.	6.8	4.7	1.5	98.1	0.00	.17	2.06	.85	.66	2.00
12/17/74	12.8	-12.2	.3		100.	15.	58.	6.2	3.6	2.9	189.9	0.00	.19	2.06	.78	.61	2.00
12/24/74	10.0	-10.6	-.3		100.	20.	60.	6.0	3.6	3.1	199.5	0.00	.37	2.67	.78	.61	2.00
12/31/74	11.1	-23.3	-6.1	0.0	100.	25.	63.	3.9	2.4	2.7	173.8	0.00	.42	2.91	.86	.81	2.00

TABLE 63. CLIMATOLOGICAL DATA FOR HERITAGE UPPER CARSON NEVADA 1974

VALUES OF FETCH 200.0),CASE A

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
1/ 2/74	2.8	-27.8	-12.5	0.0	98.	52.	75.	2.4	1.8	1.5	96.5	0.00	.34	2.67	.96	.51	2.00
1/ 9/74	16.7	-23.3	-3.3	0.0	97.	32.	65.	4.8	3.1	2.5	159.3	0.00	.47	3.16	.92	.51	2.00
1/16/74	17.8	-8.9	4.4	0.0	99.	26.	58.	8.4	4.9	5.1	331.5	0.00	.36	2.91	.95	2.13	2.00
1/23/74	14.4	-7.8	3.3	0.0	92.	12.	52.	7.8	4.0	1.3	85.3	0.00	.67	4.25	1.11	1.37	2.00
1/30/74	15.6	-10.6	2.5	0.0	94.	16.	55.	7.3	4.0	2.1	136.8	0.00	.76	4.86	1.37	2.67	2.00
2/ 6/74	13.3	-11.1	1.1	0.0	96.	16.	56.	6.6	3.7	1.3	86.9	0.00	1.00	6.56	2.04	2.88	2.00
2/13/74	16.7	-11.1	2.8	0.0	92.	24.	59.	7.5	4.3	2.6	168.9	0.00	.55	4.52	1.68	3.62	2.00
2/20/74	16.7	-11.1	2.8	0.0	91.	24.	58.	7.5	4.3	2.6	168.9	0.00	.77	5.83	2.10	3.48	2.00
2/27/74	13.3	-13.9	-.3	0.0	91.	28.	60.	6.0	3.6	3.7	238.1	0.00	.51	4.98	2.14	3.60	2.00
3/ 6/74	14.4	-5.6	4.4	0.0	98.	37.	64.	8.4	5.3	2.8	183.4	0.00	.65	6.12	2.66	3.89	2.00
3/13/74	19.4	-8.9	5.3	0.0	98.	27.	60.	8.9	5.3	2.0	127.1	0.00	.55	5.95	2.75	3.56	2.00
3/20/74	18.3	-8.9	4.7	0.0	92.	31.	62.	8.6	5.3	1.3	86.9	0.00	.96	8.74	3.81	3.96	2.00
3/27/74	17.2	-7.8	4.7	0.0	95.	32.	63.	8.6	5.4	5.2	336.3	0.00	.72	7.72	3.66	4.44	2.00
4/ 3/74	18.3	-8.3	5.0	0.0	95.	20.	58.	8.7	5.0	2.4	157.7	0.00	.94	9.47	4.38	6.07	2.00
4/10/74	19.4	-8.9	5.3	0.0	92.	26.	59.	8.9	5.3	1.4	93.3	0.00	.99	10.32	4.89	6.85	2.00
4/17/74	21.7	-8.9	6.4	0.0	92.	27.	60.	9.6	5.8	2.5	160.9	0.00	.95	10.49	5.12	7.09	2.00
4/24/74	21.3	-7.8	7.0	0.0	95.	35.	64.	10.6	6.8	1.9	122.3	0.00	.97	10.93	5.48	5.33	2.00
5/ 1/74	26.7	-.6	13.1	0.0	90.	33.	62.	15.0	9.3	1.7	111.6	0.00	.97	11.29	5.48	5.26	2.00
5/ 8/74	27.2	-1.1	13.1	0.0	93.	27.	60.	15.0	9.0	1.9	125.5	0.00	.97	11.66	6.03	8.56	2.00
5/15/74	21.7	-8.3	6.7	1.0	100.	18.	59.	9.8	5.8	2.7	173.8	0.00	.88	11.29	5.90	6.53	2.00
5/22/74	28.9	.6	14.7	0.0	99.	30.	65.	16.8	10.8	1.6	101.4	0.00	.79	10.68	5.83	6.34	2.00
5/29/74	27.8	1.7	14.7	0.0	100.	26.	63.	16.8	10.6	1.6	104.6	0.00	.93	11.95	6.44	6.77	2.00
6/ 5/74	32.2	-2.8	14.7	0.0	100.	30.	65.	16.8	10.9	1.7	109.4	0.00	.98	12.51	6.77	7.54	2.00
6/12/74	32.2	5.0	18.6	0.0	100.	24.	62.	21.5	13.3	2.4	152.9	0.00	.87	11.78	6.54	7.28	2.00
6/19/74	28.3	1.1	14.7	0.0	100.	18.	59.	16.8	9.9	2.6	165.7	0.00	.91	12.14	6.56	8.13	2.00
6/26/74	32.2	-.6	15.8	0.0	100.	22.	61.	18.0	11.0	1.9	122.3	0.00	.97	12.51	6.76	7.77	2.00
7/ 3/74	32.2	2.8	17.5	0.0	99.	20.	60.	20.0	11.9	1.9	120.7	0.00	.65	9.76	5.47	7.66	2.00
7/10/74	31.7	6.0	15.8	0.0	96.	12.	54.	18.0	9.7	2.3	146.4	0.00	.89	11.66	6.21	8.14	2.00
7/17/74	33.3	3.9	18.6	0.0	97.	18.	58.	21.5	12.3	2.3	148.0	0.00	.92	11.78	6.35	9.93	2.00
7/24/74	26.7	10.0	18.3	0.0	99.	25.	62.	21.1	13.1	1.9	120.7	0.00	.68	9.62	5.35	6.50	2.00
7/31/74	30.0	6.1	18.1	0.0	100.	33.	67.	20.7	13.8	2.2	140.0	0.00	.54	8.26	4.71	5.92	2.00
8/ 7/74	35.0	1.7	18.3	0.0	98.	25.	62.	21.1	13.0	2.2	143.2	0.00	.90	10.93	5.81	8.79	2.00
8/14/74	30.0	-.6	14.7	0.0	99.	17.	58.	16.8	9.7	2.4	154.5	0.00	1.00	11.66	5.96	7.21	2.00
8/21/74	31.1	2.2	16.7	0.0	100.	22.	61.	19.0	11.6	2.0	128.7	0.00	.84	9.84	5.08	7.34	2.00
8/28/74	30.6	5.0	17.8	0.0	100.	31.	66.	20.4	13.3	1.9	123.9	0.00	.58	7.58	4.10	5.92	2.00
9/ 3/74	31.1	2.8	16.9	0.0	100.	22.	61.	19.3	11.8	2.0	127.1	0.00	.80	8.86	4.46	7.09	2.00
9/10/74	28.9	-1.1	13.9	0.0	100.	21.	60.	15.9	9.8	1.9	122.3	0.00	.74	8.14	3.99	5.16	2.00
9/17/74	30.0	.6	15.3	0.0	100.	19.	60.	17.4	9.6	1.6	106.2	0.00	.75	7.77	3.66	5.31	2.00
9/24/74	30.6	-2.8	13.9	0.0	100.	19.	60.	15.9	9.5	1.7	109.4	0.00	.79	7.65	3.47	4.98	2.00
10/ 1/74	26.1	-6.1	10.0	0.0	100.	28.	64.	12.3	7.9	1.7	112.6	0.00	.57	5.95	2.77	3.63	2.00
10/ 8/74	21.1	-4.4	8.3	0.0	100.	25.	63.	11.0	6.9	1.4	93.3	0.00	.56	5.59	2.48	2.87	2.00
10/15/74	25.6	-6.1	9.7	0.0	98.	21.	60.	12.1	7.2	1.5	99.8	0.00	.56	5.22	2.20	3.99	2.00
10/22/74	20.0	-8.9	5.6	0.0	100.	21.	61.	9.1	5.5	1.8	119.1	0.00	.54	4.81	1.93	2.69	2.00
10/29/74	15.7	-7.2	4.7	0.0	100.	33.	67.	8.6	5.7	1.7	112.6	0.00	.20	3.04	1.49	1.78	2.00
11/ 5/74	16.7	-7.2	4.7	0.0	100.	23.	62.	8.6	5.3	1.7	112.6	0.00	.42	3.76	1.45	1.50	2.00
11/12/74	22.8	-8.3	7.2	0.0	100.	13.	57.	10.2	5.8	1.9	125.5	0.00	.47	3.64	1.23	2.03	2.00
11/19/74	18.3	-7.8	5.3	0.0	100.	7.	54.	8.9	4.8	4.0	260.7	0.00	.42	3.28	1.05	3.05	2.00
11/26/74	16.1	-11.7	2.2	0.0	100.	12.	56.	7.2	4.0	1.8	119.1	0.00	.35	2.91	.97	1.68	2.00
12/ 3/74	11.7	-9.4	1.1	0.0	100.	32.	66.	6.6	4.4	2.1	138.4	0.00	.32	2.67	.91	1.52	2.00
12/10/74	13.9	-10.0	1.9	0.0	100.	25.	63.	7.0	4.4	1.8	115.8	0.00	.16	2.06	.85	.91	2.00
12/17/74	13.9	-12.8	.6	0.0	100.	16.	58.	6.4	3.7	3.0	194.7	0.00	.18	2.06	.79	.53	2.00
12/24/74	8.9	-11.1	-1.1	0.0	100.	29.	65.	5.6	3.6	3.6	234.9	0.00	.36	2.67	.81	.53	2.00
12/31/74	10.6	-25.6	-7.5	0.0	96.	36.	66.	3.5	2.3	3.2	209.2	0.00	.41	2.91	.90	.53	2.00

TABLE 64. CLIMATOLOGICAL DATA FOR SARMAN UPPER CARSON NEVADA 1975

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00,CASE A																	
1/ 7/75	11.7	-10.6	.6	0.0	85.	45.	65.	6.4	4.1	2.7	196.3	0.00	.63	3.66	.87	0.00	1.40
1/14/75	15.9	-7.2	4.2	0.0	84.	28.	56.	8.2	4.1	.7	49.9	0.00	.63	3.76	.88	1.02	1.40
1/21/75	18.9	-7.2	5.8	0.0	82.	16.	49.	9.3	4.8	2.8	151.2	0.00	.69	4.01	1.01	1.02	1.40
1/28/75	6.1	-12.8	-3.3	0.0	85.	23.	54.	6.2	4.5	4.0	304.1	0.00	.41	4.49	1.31	1.02	1.30
2/ 4/75	11.2	-10.6	.3	0.0	81.	39.	60.	6.1	4.6	4.4	262.3	0.00	.53	4.64	1.39	1.02	1.30
2/11/75	12.7	-15.0	-1.6	0.0	82.	26.	54.	6.1	3.3	3.4	185.6	0.00	.78	4.37	1.61	1.02	1.30
2/18/75	11.7	-11.7	.3	0.0	85.	31.	58.	6.3	4.0	2.3	123.3	0.00	.86	4.76	1.03	1.02	1.30
2/25/75	19.4	-8.9	5.6	0.0	86.	18.	52.	6.6	4.5	1.7	177.5	0.00	.31	5.22	1.35	1.02	1.30
3/ 4/75	17.6	-4.4	6.4	0.0	84.	19.	52.	6.2	3.3	2.7	117.5	0.00	.59	5.07	1.06	1.02	1.30
3/11/75	10.6	-10.0	.3	0.0	83.	30.	57.	6.2	4.5	2.7	191.5	0.00	.63	5.82	1.73	1.02	1.30
3/18/75	14.8	-3.9	5.4	0.0	85.	27.	56.	6.6	5.0	3.3	347.5	0.00	.63	6.25	1.10	1.02	1.30
3/25/75	17.8	-10.8	3.6	0.0	84.	29.	57.	6.2	3.6	3.3	230.1	0.00	.45	6.19	1.72	1.02	1.30
4/ 1/75	13.2	-17.8	-2.8	0.0	83.	23.	53.	5.8	3.7	2.5	159.3	0.00	.78	6.74	1.74	1.02	1.30
4/ 8/75	15.0	-6.1	4.4	0.0	83.	24.	53.	6.1	4.9	3.3	146.4	0.00	.78	6.47	1.71	1.02	1.30
4/15/75	16.7	-6.7	5.0	0.0	85.	24.	55.	6.2	4.4	3.9	249.4	0.00	.77	6.71	1.98	1.02	1.30
4/22/75	15.7	-5.6	5.6	0.0	100.	24.	62.	6.6	4.7	4.5	236.5	0.00	1.00	7.78	2.05	1.02	1.30
4/29/75	17.9	-6.7	5.6	0.0	100.	19.	60.	6.4	4.7	4.5	185.0	0.00	.92	11.53	.94	1.02	1.30
5/ 6/75	17.8	-5.7	6.1	0.0	100.	22.	61.	6.6	4.8	4.2	154.6	0.00	.86	11.17	.94	1.02	1.30
5/13/75	21.1	-1.1	10.0	0.0	100.	22.	61.	6.6	5.3	4.6	107.8	0.00	.84	11.26	.56	1.02	1.30
5/20/75	23.3	2.2	12.8	0.0	100.	22.	61.	6.6	5.3	4.6	104.6	0.00	.95	11.66	.09	1.02	1.30
5/27/75	22.6	3.0	12.8	0.0	100.	22.	61.	6.6	5.3	4.6	156.1	0.00	1.00	11.65	.38	1.02	1.30
6/ 3/75	27.8	3.2	15.5	0.0	100.	22.	61.	6.6	5.5	4.6	193.1	0.00	.85	11.65	.76	1.02	1.30
6/10/75	22.8	3.0	12.9	0.0	100.	22.	61.	6.6	5.4	4.6	136.8	0.00	.99	11.78	.92	1.02	1.30
6/17/75	25.0	4.4	14.7	0.0	100.	22.	61.	6.6	5.4	4.6	98.1	0.00	1.00	11.66	.17	1.02	1.30
6/24/75	27.8	3.3	15.6	0.0	100.	22.	61.	6.6	5.4	4.6	127.5	0.00	.88	11.55	.13	1.02	1.30
7/ 1/75	30.0	3.9	16.9	0.0	88.	22.	55.	6.6	5.4	4.6	125.2	0.00	.98	11.45	.40	1.02	1.30
7/ 8/75	31.6	3.6	17.6	0.0	83.	22.	53.	6.6	5.4	4.6	114.5	0.00	.99	11.54	.86	1.02	1.30
7/15/75	32.2	6.6	19.4	0.0	83.	22.	53.	6.6	5.4	4.6	133.2	0.00	.97	11.81	.69	1.02	1.30
7/22/75	33.5	5.6	19.6	0.0	85.	22.	54.	6.6	5.4	4.6	135.2	0.00	.91	11.26	.92	1.02	1.30
7/29/75	33.3	7.2	20.3	0.0	90.	22.	56.	6.6	5.4	4.6	101.4	0.00	.61	10.17	.25	1.02	1.30
8/ 5/75	32.2	2.2	17.2	0.0	96.	22.	59.	6.6	5.4	4.6	106.2	0.00	1.00	11.71	.27	1.02	1.30
8/12/75	30.4	1.0	15.7	0.0	97.	22.	59.	6.6	5.4	4.6	78.8	0.00	.91	9.80	.04	1.02	1.30
8/19/75	29.7	1.8	15.8	0.0	97.	22.	59.	6.6	5.4	4.6	93.3	0.00	.53	7.80	.47	1.02	1.30
8/26/75	27.8	3.1	15.4	0.0	100.	22.	61.	6.6	5.4	4.6	83.7	0.00	.62	7.77	.56	1.02	1.30
9/ 2/75	30.0	3.1	16.5	0.0	100.	22.	61.	6.6	5.4	4.6	88.5	0.00	.81	7.80	.85	1.02	1.30
9/ 9/75	30.6	3.1	16.8	0.0	100.	22.	61.	6.6	5.4	4.6	146.3	0.00	.71	7.95	.33	1.02	1.30
9/16/75	28.8	3.1	15.9	0.0	100.	22.	61.	6.6	5.4	4.6	196.3	0.00	.43	7.95	.33	1.02	1.30
9/23/75	26.7	1.8	14.2	0.0	100.	22.	61.	6.6	5.4	4.6	80.5	0.00	.56	7.22	.32	1.02	1.30
9/30/75	26.1	-1.1	12.5	0.0	100.	22.	61.	6.6	5.4	4.6	201.2	0.00	.54	7.40	.40	1.02	1.30
10/ 7/75	17.2	-6.3	5.4	0.0	100.	22.	61.	6.6	5.4	4.6	114.5	0.00	.48	7.16	.16	1.02	1.30
10/14/75	22.2	-13.2	4.5	0.0	100.	22.	61.	6.6	5.4	4.6	214.1	0.00	.63	7.33	.33	1.02	1.30
10/21/75	18.8	-11.2	3.8	0.0	100.	22.	61.	6.6	5.4	4.6	173.8	0.00	.53	7.27	.27	1.02	1.30
10/28/75	19.8	-11.2	4.3	0.0	100.	22.	61.	6.6	5.4	4.6	61.1	0.00	.33	7.28	.28	1.02	1.30
11/ 4/75	19.8	-11.2	4.3	0.0	100.	22.	61.	6.6	5.4	4.6	93.3	0.00	.33	7.40	.40	1.02	1.30
11/11/75	19.8	-11.6	4.1	0.0	100.	22.	61.	6.6	5.4	4.6	109.4	0.00	.33	7.40	.40	1.02	1.30
11/18/75	12.2	-11.6	.3	0.0	100.	22.	61.	6.6	5.4	4.6	64.4	0.00	.33	7.16	.16	1.02	1.30
11/24/75	15.8	-12.8	1.9	0.0	100.	22.	61.	6.6	5.4	4.6	74.0	0.00	.53	2.67	.83	.91	1.30
12/ 2/75	16.7	-14.4	1.9	0.0	100.	33.	67.	6.6	5.4	4.6	152.9	0.00	.34	2.67	.83	.91	1.30
12/ 9/75	15.6	-13.9	2.5	0.0	100.	41.	71.	6.6	5.4	4.6							
12/16/75	7.8	-13.9	-3.1	0.0	100.	33.	67.	6.6	5.4	4.6							
12/23/75	15.6	-10.0	2.5	0.0	100.	41.	71.	6.6	5.4	4.6							
12/30/75	15.6	-16.7	-.6	0.0	100.	16.	58.	5.9	3.4	2.4							

TABLE 65. CLIMATOLOGICAL DATA FOR WITT UPPER CARSON NEVADA 1975

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00,CASE A																	
1/ 7/75	11.7	-10.0	.8	0.0	100.	43.	72.	6.5	4.6	2.8	209.2	0.00	.63	3.66	.89	.18	1.40
1/14/75	16.1	-8.3	3.9	0.0	100.	24.	62.	8.1	5.0	.7	49.9	0.00	.64	3.76	.91	1.27	1.40
1/21/75	18.9	-6.7	6.1	0.0	100.	13.	57.	9.4	5.3	2.4	177.8	0.00	.64	4.01	1.06	1.70	1.40
1/28/75	6.1	-16.7	-5.3	0.0	100.	14.	57.	4.1	2.4	3.7	286.4	0.00	.69	4.49	1.34	1.70	1.30
2/ 4/75	12.8	-9.4	1.7	0.0	100.	14.	57.	6.9	3.9	2.1	162.5	0.00	.41	3.64	1.36	0.00	1.30
2/11/75	11.7	-14.4	-1.4	0.0	100.	30.	65.	5.5	3.6	3.2	246.2	0.00	.53	4.37	1.65	1.50	1.30
2/18/75	11.7	-10.6	.6	0.0	100.	34.	67.	6.4	4.3	2.1	157.7	0.00	.78	5.76	2.08	1.50	1.30
2/25/75	20.0	-8.9	5.6	0.0	100.	17.	59.	9.1	5.3	2.2	165.7	0.00	.86	6.56	2.40	4.22	1.30
3/ 4/75	17.4	-4.4	6.7	0.0	100.	14.	57.	9.8	5.6	1.9	130.3	0.00	.31	4.25	2.09	1.80	1.60
3/11/75	11.1	-12.8	-.8	0.0	99.	27.	63.	5.8	3.6	2.6	180.2	0.00	.59	6.07	2.77	1.17	1.60
3/18/75	13.9	-3.9	5.0	0.0	99.	25.	62.	8.7	5.4	3.8	267.1	0.00	.66	6.80	3.14	2.03	1.60
3/25/75	17.8	-11.1	3.3	0.0	100.	48.	74.	7.8	5.8	2.9	201.1	0.00	.83	8.25	3.87	1.45	1.60
4/ 1/75	7.8	-15.6	-3.9	0.0	98.	27.	63.	4.6	2.9	3.1	201.1	0.00	.43	6.19	2.22	2.69	2.00
4/ 8/75	15.6	-6.1	4.7	0.0	100.	30.	65.	8.6	5.6	2.8	180.2	0.00	.78	8.74	4.29	3.84	2.00
4/15/75	17.8	-7.2	5.3	0.0	100.	21.	61.	8.9	5.4	2.8	180.2	0.00	.72	8.74	4.41	4.06	2.00
4/22/75	15.6	-6.7	4.4	0.0	100.	29.	64.	8.4	5.2	3.4	217.2	0.00	.75	9.47	4.80	4.83	2.00
4/29/75	19.4	-6.1	6.7	0.0	100.	23.	62.	9.8	6.0	3.2	193.1	0.00	.77	9.71	5.02	5.92	2.40
5/ 6/75	22.8	-3.9	9.4	0.0	100.	18.	59.	11.8	7.0	2.7	162.5	0.00	1.00	11.78	5.98	7.11	2.40
5/13/75	27.2	-3.3	11.9	0.0	100.	20.	60.	14.0	8.4	2.8	173.8	0.00	.92	11.53	6.03	7.37	2.40
5/20/75	22.8	-.6	11.1	0.0	100.	30.	65.	13.2	8.6	3.8	234.9	0.00	.86	11.17	5.98	6.10	2.40
5/27/75	26.3	-1.1	13.6	0.0	100.	24.	62.	15.6	9.7	2.1	128.7	0.00	.84	11.17	6.03	6.78	2.40
6/ 3/75	27.8	-.6	13.9	0.0	100.	28.	64.	15.6	10.5	2.1	125.5	0.00	.95	12.26	6.64	7.80	2.40
6/10/75	31.1	4.4	17.8	0.0	100.	20.	60.	20.4	12.2	1.6	96.5	0.00	1.00	13.11	7.16	8.81	2.40
6/17/75	27.2	.6	13.9	0.0	100.	24.	62.	15.9	9.8	3.4	206.0	0.00	.85	11.66	6.37	7.65	2.40
6/24/75	24.4	-3.3	10.6	0.0	100.	23.	62.	12.8	7.8	3.4	207.6	0.00	.99	12.75	6.78	8.15	2.40
7/ 1/75	31.7	.6	16.1	0.0	100.	22.	61.	18.3	11.2	2.1	127.1	0.00	1.00	12.87	6.95	8.61	2.50
7/ 8/75	32.8	4.4	18.6	0.0	100.	25.	63.	21.5	13.4	1.9	117.5	0.00	.88	11.66	6.42	8.56	2.50
7/15/75	30.0	8.9	19.4	0.0	99.	33.	66.	22.6	14.9	2.4	144.8	0.00	.88	11.51	6.28	8.28	2.50
7/22/75	35.6	6.1	20.8	0.0	99.	20.	60.	24.6	14.7	1.8	106.2	0.00	.98	12.14	6.58	8.71	2.50
7/29/75	31.7	.6	16.1	0.0	100.	21.	61.	18.3	11.1	1.7	103.0	0.00	.99	11.95	6.27	8.13	2.40
8/ 5/75	32.2	9.0	16.1	0.0	100.	19.	60.	18.3	10.9	2.1	129.7	0.00	.97	11.54	6.00	7.85	2.40
8/12/75	30.6	3.3	16.9	0.0	100.	28.	64.	19.3	12.4	2.4	146.4	0.00	.91	10.81	5.70	8.28	2.40
8/19/75	26.7	4.4	15.6	0.0	98.	28.	63.	17.7	11.1	1.7	103.0	0.00	.61	8.26	4.45	4.32	2.40
8/26/75	27.8	-.6	13.6	0.0	98.	25.	62.	15.6	9.6	2.5	154.5	0.00	1.00	11.17	5.62	7.90	2.90
9/ 2/75	30.6	1.1	15.8	0.0	100.	20.	60.	18.0	10.8	1.3	75.6	0.00	.91	9.71	4.77	6.07	2.90
9/ 9/75	28.9	3.3	16.1	0.0	98.	27.	63.	18.3	11.5	1.5	88.5	0.00	.53	6.80	3.55	4.32	2.90
9/16/75	27.2	1.1	14.2	0.0	99.	25.	62.	16.2	10.0	1.4	82.1	0.00	.62	7.04	3.47	5.25	2.90
9/23/75	27.8	-.6	13.6	0.0	100.	20.	60.	15.6	9.4	1.4	80.5	0.00	.81	7.77	3.53	4.98	2.90
9/30/75	27.8	1.1	14.4	0.0	100.	21.	61.	16.5	10.0	2.3	154.5	0.00	.71	6.80	3.06	5.44	1.90
10/ 7/75	19.4	-5.8	8.3	0.0	100.	20.	60.	11.0	6.6	2.8	186.6	0.00	.44	4.95	2.31	3.30	1.90
10/14/75	23.9	-7.2	8.3	0.0	100.	21.	61.	11.0	6.6	1.1	70.8	0.00	.65	5.71	2.33	3.20	1.90
10/21/75	22.8	-9.4	6.7	0.0	100.	23.	62.	9.8	6.0	3.1	206.0	0.00	.56	4.95	1.98	2.69	1.90
10/28/75	20.0	-10.0	5.0	0.0	100.	25.	63.	8.7	4.7	1.9	123.9	0.00	.70	5.22	1.78	2.79	1.90
11/ 4/75	22.2	-9.4	6.4	0.0	100.	25.	63.	9.6	6.0	2.9	189.9	0.00	.54	4.25	1.53	4.39	1.90
11/11/75	20.0	-10.0	5.0	0.0	100.	15.	58.	8.7	5.5	2.7	178.6	0.00	.63	4.27	1.28	4.32	1.90
11/18/75	13.9	-16.1	-1.1	0.0	100.	25.	63.	5.6	3.5	1.7	111.1	0.00	.56	3.77	1.12	1.02	1.90
11/24/75	10.3	-11.1	-3.6	0.0	100.	26.	63.	7.9	5.0	2.3	154.5	0.00	.46	3.28	1.01	.94	1.90
12/ 2/75	18.3	-10.6	3.9	0.0	100.	20.	60.	8.1	4.9	.9	67.6	0.00	.54	3.40	.86	1.27	1.40
12/ 9/75	16.7	-16.1	.3	0.0	100.	31.	66.	6.2	4.1	2.0	146.4	0.00	.48	3.04	.79	.74	1.40
12/16/75	8.9	-15.6	-3.3	0.0	100.	38.	69.	4.8	3.3	.8	59.5	0.00	.64	3.40	.70	.74	1.40
12/23/75	16.7	-11.7	2.5	0.0	100.	36.	68.	7.3	5.0	1.2	91.7	0.00	.53	3.16	.76	.74	1.40
12/30/75	13.3	-17.2	-1.9	0.0	100.	23.	62.	5.3	3.3	2.6	167.3	0.00	.35	2.67	.84	1.09	2.10

TABLE 66. CLIMATOLOGICAL DATA FOR HERITAGE UPPER CARSON NEVADA 1975

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	EO	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 7/75	12.2	-10.6	.8		100.	43.	72.	6.5	4.6	3.4	251.0	0.00	.62	3.66	.91	.36	1.40
1/14/75	16.1	-6.7	4.7		100.	22.	61.	8.6	5.2	1.1	82.1	0.00	.63	3.76	.92	1.35	1.40
1/21/75	19.4	-8.3	5.3		100.	17.	59.	9.1	5.3	2.9	215.6	0.00	.63	4.01	.99	.94	1.40
1/28/75	5.0	-15.6	-5.3		100.	49.	75.	6.5	4.2	4.6	349.2	0.00	.68	4.49	.36	.94	1.30
2/ 4/75	9.2	-10.8	-1.3		100.	25.	63.	6.0	3.5	3.9	226.9	0.00	.41	4.64	.45	0.00	1.30
2/11/75	12.2	-12.2	-1.3		100.	29.	65.	9.3	5.1	3.3	302.5	0.00	.53	4.37	.58	.50	1.30
2/18/75	11.0	-12.3	-1.8		100.	29.	65.	9.8	5.1	3.4	173.8	0.00	.78	4.76	.76	.57	1.30
2/25/75	20.0	-8.3	5.8		100.	11.	55.	6.6	4.5	3.6	223.7	0.00	.86	4.56	.57	.75	1.00
3/ 4/75	17.8	-9.4	4.2		100.	14.	57.	8.6	5.1	3.6	162.5	0.00	.31	4.25	.25	.27	1.60
3/11/75	11.4	-12.2	-.4		100.	22.	61.	7.8	4.5	3.7	236.5	0.00	.55	4.07	.07	.80	1.60
3/18/75	18.4	-5.3	6.5		100.	22.	61.	8.7	5.2	3.1	453.7	0.00	.82	4.80	.80	.30	1.60
3/25/75	13.7	-16.1	-1.4		100.	28.	64.	8.8	5.1	2.8	252.6	0.00	.45	4.19	.25	.15	2.00	
4/ 1/75	16.7	-6.7	5.0		99.	26.	63.	8.7	5.5	2.2	304.1	0.00	.70	4.74	.80	.66	2.00
4/ 8/75	16.7	-6.7	5.5		100.	26.	63.	8.9	5.5	2.2	181.8	0.00	.72	4.71	.02	.18	2.00
4/15/75	17.2	-6.1	5.6		100.	23.	62.	9.8	5.3	2.4	300.9	0.00	.78	4.47	.99	.04	2.00
4/22/75	18.8	-5.3	6.8		100.	19.	60.	11.4	6.8	2.8	133.5	0.00	.77	4.71	.09	.34	2.40
4/29/75	22.3	-5.1	8.5		100.	22.	63.	15.3	9.8	2.6	209.2	0.00	1.00	4.78	.09	.43	2.40
5/ 6/75	27.4	-1.1	13.0		100.	22.	63.	12.8	7.7	2.6	176.6	0.00	.92	4.53	.03	.53	2.40
5/13/75	30.1	1.3	15.7		100.	20.	63.	17.1	10.2	2.5	191.5	0.00	.86	4.17	.61	.70	2.40
5/20/75	28.5	3.0	15.8		100.	26.	66.	16.6	9.6	2.2	144.8	0.00	.84	4.26	.16	.47	2.40
5/27/75	30.1	2.0	16.1		100.	22.	66.	18.3	10.2	2.1	140.9	0.00	.95	4.11	.40	.96	2.40
6/ 3/75	28.3	3.0	15.7		98.	30.	66.	15.5	9.1	2.2	131.9	0.00	1.00	4.26	.76	.46	2.40
6/10/75	29.4	3.4	16.4		100.	28.	66.	15.5	9.1	2.1	186.6	0.00	.85	4.17	.95	.15	2.40
6/17/75	27.4	2.0	14.7		100.	33.	66.	12.5	7.6	2.1	209.1	0.00	.99	4.26	.66	.85	2.40
6/24/75	31.7	5.3	18.5		100.	22.	63.	13.1	7.9	2.1	193.1	0.00	1.00	4.11	.37	.72	2.40
7/ 1/75	31.1	5.6	18.4		100.	22.	63.	13.3	7.8	2.1	128.7	0.00	.88	4.11	.39	.52	2.40
7/ 8/75	31.1	7.6	19.4		100.	33.	67.	16.6	9.6	2.1	152.9	0.00	.88	4.11	.68	.78	2.40
7/15/75	30.1	6.2	18.2		100.	28.	64.	15.1	8.9	2.1	98.1	0.00	.99	4.11	.37	.70	2.40
7/22/75	32.6	7.6	20.1		100.	18.	59.	14.3	8.5	1.8	99.8	0.00	.97	4.11	.01	.10	2.40
7/29/75	32.8	7.1	20.0		100.	18.	59.	15.6	8.8	1.8	112.6	0.00	.91	4.11	.71	.17	2.40
8/ 5/75	32.1	6.2	19.2		100.	16.	58.	14.3	8.5	1.8	127.1	0.00	.51	4.11	.58	.00	2.40
8/12/75	31.7	4.2	17.9		100.	16.	58.	13.5	8.1	1.8	85.3	0.00	1.00	4.11	.81	.90	2.40
8/19/75	28.3	0.7	14.5		100.	15.	57.	11.6	7.2	1.8	172.2	0.00	.91	4.11	.26	.04	2.40
8/26/75	28.4	1.4	14.9		100.	17.	58.	12.0	7.4	1.8	88.6	0.00	.53	4.11	.17	.77	2.40
9/ 2/75	30.0	1.3	15.7		100.	14.	57.	11.4	7.2	1.8	104.1	0.00	.63	4.11	.80	.95	2.40
9/ 9/75	30.2	2.2	16.2		100.	14.	57.	11.4	7.2	1.8	90.1	0.00	.80	4.11	.71	.71	2.40
9/16/75	31.1	4.2	17.6		100.	14.	57.	11.4	7.2	1.8	94.9	0.00	.71	4.11	.43	.22	2.40
9/23/75	28.6	1.4	15.0		100.	14.	57.	11.4	7.2	1.8	186.6	0.00	.65	4.11	.65	.25	2.40
9/30/75	27.8	1.5	14.7		100.	14.	57.	11.4	7.2	1.8	220.1	0.00	.55	4.11	.69	.27	2.40
10/ 7/75	23.9	3.5	13.7		100.	14.	57.	11.4	7.2	1.8	111.0	0.00	.69	4.11	.33	.28	2.40
10/14/75	22.8	-1.1	10.8		100.	14.	57.	11.4	7.2	1.8	271.9	0.00	.53	4.11	.62	.40	2.40
10/21/75	19.4	-1.0	9.2		100.	14.	57.	11.4	7.2	1.8	149.6	0.00	.62	4.11	.55	.04	2.40
10/28/75	20.4	-1.1	9.6		100.	14.	57.	11.4	7.2	1.8	241.4	0.00	.55	4.11	.45	.09	2.40
11/ 4/75	19.4	-1.1	9.2		100.	14.	57.	11.4	7.2	1.8	238.1	0.00	.45	4.11	.54	.40	2.40
11/11/75	15.0	-1.6	6.7		100.	14.	57.	11.4	7.2	1.8	109.1	0.00	.47	4.11	.52	.16	2.40
11/18/75	16.0	-2.8	6.6		100.	14.	57.	11.4	7.2	1.8	164.1	0.00	.63	4.11	.34	.67	2.40
11/24/75	17.8	-8.9	4.4		100.	14.	57.	11.4	7.2	1.8	148.2	0.00	.52	4.11		1.19	2.40
12/ 2/75	8.3	-16.1	-3.9		100.	14.	57.	11.4	7.2	1.8	151.2	0.00	.34	4.11			2.40
12/ 9/75	10.6	-15.6	-3.0		100.	14.	57.	11.4	7.2	1.8	94.9	0.00		4.11			2.40
12/16/75	14.4	-10.6	-1.1		100.	14.	57.	11.4	7.2	1.8	114.2	0.00		4.11			2.40
12/23/75		-16.7			100.	14.	57.	11.4	7.2	1.8	168.9	0.00		4.11			2.40
12/30/75					100.	14.	57.	11.4	7.2	1.8		0.00		4.11			2.40

TABLE 67. CLIMATOLOGICAL DATA FOR SARMAN UPPER CARSON NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 6/76	15.6	-9.4	3.1	0.0	100.	31.	66.	7.6	5.0	2.5	159.3	0.00	.44	3.04	.88	.91	2.10
1/13/76	15.0	-12.8	1.1	0.0	100.	30.	65.	6.6	4.3	1.1	72.4	0.00	.53	3.40	.93	1.09	2.10
1/21/76	11.1	-13.9	-1.4	0.0	100.	26.	63.	5.5	3.5	.3	48.3	0.00	.46	3.40	1.10	.53	2.10
1/28/76	14.4	-11.1	1.7	0.0	100.	28.	64.	6.9	4.4	.7	45.1	0.00	.69	4.49	1.34	.53	2.10
2/ 4/76	16.7	-16.7	0.0	0.0	100.	77.	89.	6.1	5.4	1.6	128.7	0.00	.26	3.04	1.39	.36	1.20
2/11/76	9.4	-17.2	-3.9	0.0	100.	32.	66.	4.6	3.0	2.0	156.1	0.00	.96	4.49	1.69	.36	1.20
2/18/76	11.7	-10.0	.8	0.0	100.	22.	61.	6.5	4.0	2.2	170.6	0.00	.86	5.22	1.95	1.88	1.20
2/25/76	14.4	-7.8	3.3	0.0	100.	30.	65.	7.8	5.1	4.0	317.0	0.00	.45	4.61	2.02	2.01	1.20
3/ 3/76	11.7	-15.6	-1.9	0.0	100.	32.	66.	5.3	3.5	1.4	88.5	0.00	.85	7.04	2.86	2.45	1.20
3/10/76	16.7	-10.0	3.3	0.0	100.	19.	60.	7.8	4.6	1.9	122.3	0.00	.78	7.04	2.99	3.45	1.20
3/17/76	20.0	-12.8	3.6	0.0	100.	21.	61.	7.9	4.8	4.1	263.9	0.00	.93	8.38	3.59	5.51	1.20
3/24/76	15.6	-11.7	1.9	0.0	100.	27.	64.	7.0	4.5	3.6	230.1	0.00	1.00	9.23	4.93	4.93	1.20
3/31/76	19.4	-8.3	5.6	0.0	100.	26.	63.	9.1	5.7	3.8	251.0	0.00	.98	9.59	4.42	5.82	1.40
4/ 7/76	17.8	-12.2	2.8	0.0	100.	23.	62.	7.5	4.6	4.2	275.1	0.00	1.00	10.20	4.80	5.92	1.40
4/14/76	20.6	-10.6	5.0	0.0	100.	27.	64.	8.7	5.5	2.6	168.9	0.00	1.00	10.76	5.24	3.53	1.40
4/21/76	21.1	-7.8	6.7	0.0	100.	18.	59.	9.8	5.8	3.2	214.0	0.00	1.00	11.49	5.75	6.50	1.40
4/28/76	23.3	-7.8	7.8	0.0	100.	21.	61.	10.6	6.4	2.2	135.2	0.00	1.00	12.02	6.17	5.99	1.40
5/ 5/76	21.7	0.0	10.8	0.0	100.	27.	64.	13.0	8.3	2.3	143.2	0.00	.80	10.20	5.36	5.08	1.40
5/12/76	27.8	-2.8	12.5	0.0	100.	22.	61.	14.5	8.9	2.7	170.6	0.00	1.00	13.84	7.60	8.71	1.40
5/19/76	21.1	-3.3	8.9	0.0	100.	22.	61.	11.4	7.0	2.4	151.2	0.00	1.00	12.87	6.82	6.53	1.40
5/26/76	25.6	-4.4	10.6	0.0	100.	21.	61.	12.8	7.7	3.1	197.9	0.00	1.00	13.11	7.01	7.78	1.40
6/ 2/76	23.9	-4.4	9.7	0.0	100.	22.	61.	12.1	7.4	3.5	209.2	0.00	.91	11.90	6.33	8.89	1.40
6/ 9/76	28.3	-2.8	12.8	0.0	100.	22.	61.	14.8	9.0	2.4	148.0	0.00	.59	9.35	5.25	5.44	1.40
6/16/76	29.4	1.1	15.3	0.0	96.	23.	60.	17.4	10.3	3.4	207.6	0.00	1.00	13.75	7.54	9.04	1.40
6/23/76	31.7	1.6	15.6	0.0	98.	16.	57.	17.7	10.1	2.3	141.6	0.00	.99	12.75	6.81	9.14	1.40
6/30/76	31.7	3.3	14.2	0.0	98.	18.	58.	16.2	9.4	2.8	170.6	0.00	.94	12.26	6.54	8.81	1.40
7/ 7/76	32.8	1.1	16.9	0.0	99.	18.	59.	19.3	11.3	2.3	143.2	0.00	.94	12.14	6.53	10.06	1.40
7/14/76	32.8	3.3	18.1	0.0	98.	21.	60.	20.7	12.3	2.0	123.9	0.00	.62	9.37	5.26	7.09	1.40
7/21/76	32.8	1.1	16.9	0.0	97.	17.	57.	19.3	11.0	1.8	111.6	0.00	.65	9.47	5.21	7.03	1.40
7/28/76	32.8	2.2	17.5	0.0	98.	27.	63.	20.0	12.5	1.4	83.7	0.00	.53	8.26	4.68	5.11	1.40
8/ 4/76	29.4	-1.7	13.9	0.0	99.	18.	59.	15.9	9.3	2.3	140.0	0.00	1.00	12.24	6.39	7.39	1.40
8/11/76	28.9	.6	14.7	0.0	98.	21.	60.	16.8	10.0	2.7	159.3	0.00	.83	10.20	5.32	6.27	1.60
8/18/76	31.1	1.7	16.4	0.0	100.	8.	54.	18.7	10.1	2.0	120.7	0.00	.83	9.96	5.09	4.83	1.60
8/25/76	33.9	1.1	17.5	0.0	96.	28.	62.	20.0	12.4	1.6	93.3	0.00	1.00	10.81	5.47	7.11	1.60
9/ 1/76	33.3	-1.1	16.1	0.0	100.	3.	52.	18.3	9.4	1.7	99.8	0.00	.55	7.29	3.75	7.37	1.60
9/ 8/76	28.9	-1.7	13.6	0.0	98.	14.	56.	15.6	8.7	1.3	80.5	0.00	.64	7.53	3.74	4.06	1.60
9/15/76	25.0	.6	12.8	0.0	89.	15.	52.	14.8	7.7	1.9	114.2	0.00	.73	7.77	3.62	4.39	1.60
9/22/76	25.6	2.8	14.2	0.0	100.	14.	57.	16.2	9.2	1.3	77.2	0.00	.72	7.29	3.38	4.30	1.60
9/29/76	23.9	-1.7	11.1	0.0	97.	20.	59.	13.2	7.7	1.4	83.7	0.00	.59	6.19	2.84	3.30	1.70
10/ 6/76	27.8	-3.9	11.9	0.0	95.	13.	54.	14.0	7.6	1.3	75.6	0.00	.69	6.36	2.68	3.56	1.70
10/13/76	25.6	-7.8	8.9	0.0	98.	11.	55.	11.4	6.2	2.2	130.3	0.00	.56	5.32	2.23	3.05	1.70
10/20/76	19.4	-6.1	6.7	0.0	98.	10.	54.	9.8	5.3	1.5	86.9	0.00	.46	4.54	1.89	2.82	1.70
10/27/76	21.7	-11.7	5.0	0.0	99.	18.	59.	8.7	5.1	1.0	57.9	0.00	.50	4.42	1.72	2.36	1.70
11/ 3/76	23.3	-9.4	6.9	0.0	98.	22.	60.	10.4	6.0	.6	38.6	0.00	.45	3.93	1.51	1.85	1.30
11/10/76	19.4	-10.6	4.4	0.0	98.	27.	63.	8.4	5.3	1.6	106.2	0.00	.20	2.70	1.22	1.70	1.90
11/17/76	19.4	-11.1	4.2	0.0	93.	35.	64.	8.2	5.3	.7	46.7	0.00	.41	3.28	1.12	.60	1.90
11/25/76	18.3	-14.4	1.9	0.0	95.	28.	62.	7.0	4.3	1.2	80.5	0.00	.25	2.55	1.00	.86	1.90
12/ 1/76	13.9	-17.8	-1.9	0.0	97.	26.	62.	5.3	3.3	.8	61.1	0.00	.38	2.69	.82	.86	1.50
12/ 8/76	17.2	-16.1	.6	0.0	98.	23.	61.	6.4	3.9	1.1	80.5	0.00	.37	2.74	.86	.86	1.50
12/15/76	11.1	-18.9	-3.9	0.0	98.	30.	64.	4.6	2.9	.7	49.9	0.00	.30	2.40	.76	.86	1.50
12/22/76	12.2	-18.3	-3.1	0.0	98.	24.	61.	4.9	3.0	.8	56.3	0.00	.28	2.40	.81	.86	1.50
12/29/76	12.8	-15.0	-1.1	0.0	97.	26.	62.	5.6	3.5	2.4	172.2	0.00	.13	1.97	.88	.86	1.50

TABLE 68. CLIMATOLOGICAL DATA FOR WITT UPPER CARSON NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH			20[.00,CASE A														
1/ 6/76	15.6	-10.6	2.5	0.0	100.	31.	66.	7.3	4.8	2.2	141.6	0.00	.45	3.04	.87	1.09	2.10
1/13/76	15.6	-9.4	3.1	0.0	100.	30.	65.	7.6	5.0	1.3	83.7	0.00	.53	3.40	.92	.94	2.10
1/21/76	12.2	-15.6	-1.7	0.0	100.	28.	64.	5.4	3.5	.8	49.9	0.00	.46	3.40	1.10	.94	2.10
1/28/76	17.2	-11.1	3.1	0.0	100.	25.	63.	7.6	4.8	1.1	69.2	0.00	.63	4.49	1.32	.94	2.10
2/ 4/76	17.2	-14.4	1.4	0.0	100.	25.	63.	6.8	4.2	2.1	167.3	0.00	.26	3.04	1.32	.03	2.20
2/11/76	11.1	-15.0	-1.9	0.0	100.	32.	66.	5.3	3.5	1.7	135.2	0.00	.56	4.49	1.67	.03	2.20
2/18/76	16.7	-9.4	3.6	0.0	100.	23.	62.	7.9	4.9	2.3	178.6	0.00	.66	5.22	1.94	2.18	2.20
2/25/76	15.6	-7.2	4.2	0.0	100.	30.	65.	8.2	5.4	3.4	268.7	0.00	.46	4.61	2.02	2.93	2.20
3/ 3/76	12.2	-13.9	-.8	0.0	100.	26.	63.	5.8	3.6	1.6	106.2	0.00	.86	7.04	2.82	1.09	2.00
3/10/76	18.3	-11.1	3.6	0.0	98.	25.	62.	7.9	4.9	2.3	146.4	0.00	.78	7.04	3.00	4.24	2.00
3/17/76	21.1	-11.7	4.7	0.0	99.	26.	63.	8.6	5.4	4.0	259.0	0.00	.94	8.38	3.61	5.66	2.00
3/24/76	16.7	-11.1	2.8	0.0	98.	33.	66.	7.5	4.9	4.2	271.9	0.00	1.00	9.23	4.12	5.44	2.00
3/31/76	20.0	-8.9	5.6	0.0	98.	30.	64.	9.1	5.8	4.1	273.5	0.00	.98	9.59	4.43	6.50	1.90
4/ 7/76	18.9	-13.3	2.8	0.0	100.	30.	65.	7.5	4.9	4.5	296.1	0.00	1.00	10.20	4.83	6.53	1.90
4/14/76	21.1	-11.1	5.0	0.0	95.	29.	62.	8.7	5.4	3.1	207.6	0.00	1.00	10.76	5.23	4.75	1.90
4/21/76	21.1	-10.0	5.6	0.0	100.	25.	58.	9.1	5.2	3.8	247.8	0.00	1.00	11.49	5.73	7.14	1.90
4/28/76	25.0	-6.7	9.2	0.0	100.	17.	59.	11.6	5.8	2.3	144.8	0.00	1.00	12.02	6.15	5.18	2.00
5/ 5/76	22.8	-.6	11.7	0.0	95.	30.	63.	13.7	8.6	2.9	185.0	0.00	.80	10.20	5.36	5.16	2.00
5/12/76	28.3	-3.9	12.2	0.0	95.	23.	59.	14.2	8.4	2.9	160.2	0.00	1.00	13.84	7.56	8.92	2.00
5/19/76	22.8	-5.0	8.9	0.0	98.	28.	63.	11.4	7.2	2.8	173.8	0.00	1.00	12.37	6.84	7.29	2.00
5/26/76	26.1	-3.9	11.1	0.0	94.	25.	60.	13.2	7.9	3.5	218.8	0.00	1.00	13.11	7.01	8.89	2.00
6/ 2/76	23.9	-.6	11.7	0.0	99.	31.	65.	13.7	8.9	3.8	231.7	0.00	.91	11.90	6.40	8.89	2.00
6/ 9/76	27.8	-.6	13.6	0.0	98.	28.	63.	15.6	9.8	1.2	72.4	0.00	.59	9.35	5.28	7.11	2.00
6/16/76	29.4	2.8	16.1	0.0	96.	33.	65.	18.3	11.8	3.1	185.0	0.00	1.00	13.72	7.65	9.14	2.00
6/23/76	31.7	5.0	18.3	0.0	97.	21.	59.	21.1	12.4	2.4	146.4	0.00	.99	12.75	6.92	9.14	2.00
6/30/76	31.7	2.2	16.9	0.0	97.	27.	62.	19.3	12.0	3.1	189.9	0.00	.94	12.26	6.67	9.80	2.00
7/ 7/76	32.2	4.4	18.3	0.0	97.	25.	61.	21.1	12.9	2.9	177.0	0.00	.94	12.14	6.62	10.90	2.00
7/14/76	32.2	6.7	19.4	0.0	97.	26.	62.	22.5	13.9	2.1	128.7	0.00	.62	9.33	5.31	6.96	2.00
7/21/76	32.2	4.4	18.3	0.0	94.	28.	61.	21.1	12.9	1.9	117.5	0.00	.65	9.47	5.29	6.93	2.00
7/28/76	32.2	3.9	18.1	0.0	93.	32.	63.	20.7	13.0	1.7	104.6	0.00	.53	8.26	4.69	4.90	2.00
8/ 4/76	31.7	0.9	15.8	0.0	93.	45.	69.	18.0	12.4	2.5	148.8	0.00	1.00	12.24	6.60	6.96	2.00
8/11/76	30.0	1.1	15.6	0.0	95.	22.	59.	17.7	10.3	3.1	186.6	0.00	.83	10.20	5.32	6.20	2.00
8/18/76	31.1	3.9	17.5	0.0	97.	43.	70.	20.0	14.0	2.0	122.3	0.00	.83	9.96	5.34	4.98	2.00
8/25/76	32.8	2.8	17.8	0.0	96.	28.	62.	20.4	12.6	1.9	114.2	0.00	1.00	10.81	5.48	7.04	2.00
9/ 1/76	33.3	3.3	18.3	0.0	93.	22.	58.	21.1	12.1	2.0	117.5	0.00	.56	7.29	3.85	5.20	2.00
9/ 8/76	29.4	3.3	16.4	0.0	98.	14.	56.	18.7	10.4	1.7	101.4	0.00	.64	7.53	3.77	3.63	2.00
9/15/76	24.4	.6	12.5	0.0	89.	15.	52.	14.5	7.5	2.0	120.7	0.00	.73	7.77	3.62	3.38	2.00
9/22/76	26.1	3.3	14.7	0.0	100.	18.	59.	16.8	9.9	1.5	91.7	0.00	.72	7.29	3.40	4.85	2.00
9/29/76	23.9	-.6	11.7	0.0	85.	23.	54.	13.7	7.4	1.7	101.4	0.00	.59	6.19	2.80	2.69	2.00
10/ 6/76	27.2	-4.4	11.4	0.0	87.	13.	50.	13.5	6.7	1.5	91.7	0.00	.69	6.36	2.63	3.99	2.70
10/13/76	25.0	-6.1	9.4	0.0	92.	8.	50.	11.8	5.9	1.2	70.8	0.00	.56	5.32	2.19	3.45	2.70
10/20/76	20.0	-5.6	7.2	0.0	93.	15.	54.	10.2	5.5	1.8	107.8	0.00	.47	4.54	1.88	3.05	2.70
10/27/76	21.1	-10.0	5.6	0.0	90.	7.	49.	9.1	4.4	1.1	67.6	0.00	.51	4.42	1.66	2.54	2.70
11/ 3/76	22.8	-8.3	7.2	0.0	89.	12.	51.	10.2	5.1	.8	54.7	0.00	.45	3.93	1.45	2.13	1.90
11/10/76	19.4	-5.6	6.9	0.0	94.	20.	57.	10.0	5.7	1.6	107.8	0.00	.20	2.70	1.20	1.55	1.80
11/17/76	26.6	-10.6	5.0	0.0	93.	23.	58.	8.7	5.1	.8	53.1	0.00	.42	3.28	1.09	2.31	1.80
11/25/76	19.4	-17.8	-.8	0.0	88.	14.	51.	6.5	3.3	1.9	127.1	0.00	.25	2.55	.96	.91	1.90
12/ 1/76	15.0	-16.1	-.6	0.0	97.	26.	62.	5.9	3.6	.9	62.8	0.00	.38	2.89	.91	.91	1.90
12/ 8/76	17.8	-15.6	1.1	0.0	98.	21.	60.	6.6	3.9	1.3	90.1	0.00	.37	2.74	.80	.94	1.90
12/15/76	12.2	-18.9	-3.3	0.0	99.	27.	63.	4.8	3.0	.7	49.9	0.00	.30	2.40	.75	.91	1.90
12/22/76	13.9	-18.9	-2.5	0.0	98.	24.	61.	5.1	3.1	.7	53.1	0.00	.28	2.40	.80	.91	1.90
12/29/76	13.9	-18.3	-2.2	0.0	98.	26.	62.	5.2	3.2	2.0	146.4	0.00	.18	1.97	.87	.94	1.90

TABLE 69. CLIMATOLOGICAL DATA FOR HERITAGE UPPER CARSON NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 6/76	15.6	-11.1	2.2	0.0	100.	30.	65.	7.2	4.7	2.9	185.0	0.00	.44	3.04	.89	1.19	2.10
1/13/76	15.6	-8.9	3.3	0.0	100.	29.	65.	7.8	5.0	1.5	93.3	0.00	.52	3.40	.93	1.45	2.10
1/21/76	12.9	-15.0	-1.1	0.0	100.	24.	62.	5.6	3.5	1.1	67.6	0.00	.45	3.40	1.10	.84	2.10
1/28/76	16.1	-10.0	3.1	0.0	100.	29.	65.	7.6	4.9	1.1	72.4	0.00	.58	4.49	1.35	.84	2.10
2/ 4/76	18.3	-18.3	0.0	0.0	100.	24.	62.	6.1	3.8	2.2	172.2	0.00	.26	3.04	1.33	.33	1.20
2/11/76	10.0	-18.3	-4.2	0.0	100.	32.	66.	4.5	3.0	2.5	194.7	0.00	.56	4.49	1.70	1.09	1.20
2/18/76	14.4	-10.0	2.2	0.0	100.	19.	60.	7.2	4.3	2.9	226.9	0.00	.66	5.22	1.94	1.46	1.20
2/25/76	16.7	-6.7	5.0	0.0	100.	26.	63.	8.7	5.5	6.0	476.3	0.00	.45	4.61	2.02	2.21	1.50
3/ 3/76	12.2	-13.9	-.8	0.0	100.	35.	68.	5.8	3.9	1.4	88.5	0.00	.85	7.04	2.86	2.21	1.00
3/10/76	17.2	-10.0	3.6	0.0	100.	14.	57.	7.9	5.0	2.1	133.5	0.00	.77	7.04	2.98	3.48	2.00
3/17/76	21.1	-10.0	5.6	0.0	100.	19.	60.	9.1	5.4	5.1	328.2	0.00	.93	8.38	3.59	5.99	2.00
3/24/76	16.7	-15.0	.8	0.0	100.	23.	62.	6.5	4.0	3.9	254.2	0.00	.99	9.23	4.10	5.36	2.00
3/31/76	20.0	-8.9	5.6	0.0	100.	28.	64.	9.1	5.8	4.1	273.5	0.00	.97	9.59	4.43	6.07	1.90
4/ 7/76	18.9	-11.1	3.9	0.0	100.	23.	62.	8.1	5.0	4.8	315.4	0.00	1.00	10.20	4.80	7.04	1.90
4/14/76	22.2	-10.6	5.8	0.0	100.	29.	65.	9.3	6.0	3.1	201.1	0.00	1.00	10.76	5.26	3.81	1.90
4/21/76	22.8	-7.2	7.8	0.0	100.	10.	55.	10.6	5.8	4.1	267.1	0.00	1.00	11.49	5.71	6.96	1.90
4/28/76	24.4	-5.6	9.4	0.0	100.	26.	63.	11.8	7.5	3.0	186.6	0.00	1.00	12.02	6.21	6.53	2.20
5/ 5/76	23.3	-.6	11.4	0.0	100.	30.	65.	13.5	8.8	2.8	177.0	0.00	.80	10.20	5.39	5.41	2.20
5/12/76	28.3	-1.7	13.3	0.0	100.	23.	62.	15.3	9.4	3.7	231.7	0.00	1.00	13.84	7.62	9.04	2.20
5/19/76	22.3	-.6	11.1	0.0	100.	28.	64.	13.2	8.5	2.3	143.2	0.00	1.00	12.87	6.89	6.17	2.20
5/26/76	25.6	-1.1	12.2	0.0	100.	26.	63.	14.2	9.0	3.6	226.9	0.00	1.00	13.11	7.07	7.62	2.20
6/ 2/76	23.3	-3.9	9.7	0.0	100.	24.	62.	12.1	7.5	4.0	241.4	0.00	.91	11.90	6.34	8.89	2.50
6/ 9/76	27.8	-1.1	13.3	0.0	94.	15.	55.	15.3	8.4	2.2	130.3	0.00	.59	9.35	5.19	5.59	2.50
6/16/76	29.4	2.2	15.8	0.0	91.	22.	57.	18.0	10.2	3.4	206.0	0.00	1.00	13.72	7.51	9.14	2.50
6/23/76	32.2	1.0	16.9	0.0	86.	8.	48.	19.3	9.3	2.8	167.3	0.00	.99	12.75	6.67	9.32	2.50
6/30/76	30.6	0.0	15.3	0.0	93.	17.	55.	17.4	9.6	3.0	185.0	0.00	.94	12.26	6.52	8.99	2.40
7/ 7/76	33.3	3.3	18.3	0.0	91.	18.	55.	21.1	11.5	2.6	157.7	0.00	.94	12.14	6.50	8.64	2.40
7/14/76	32.8	5.0	18.6	0.0	94.	20.	57.	21.5	12.2	1.9	119.1	0.00	.61	9.33	5.24	6.53	2.40
7/21/76	32.8	3.3	18.1	0.0	89.	17.	53.	20.7	11.0	1.9	114.2	0.00	.65	9.47	5.18	6.95	2.40
7/28/76	33.3	3.9	18.6	0.0	92.	22.	57.	21.5	12.2	1.4	83.7	0.00	.53	8.26	4.64	4.85	2.40
8/ 4/76	30.6	2.2	16.4	0.0	90.	21.	56.	18.7	10.4	1.7	103.0	0.00	1.00	12.24	6.39	6.85	2.60
8/11/76	31.7	.6	16.1	0.0	94.	12.	53.	18.3	9.7	2.3	136.8	0.00	.82	10.20	5.26	5.99	2.60
8/18/76	31.1	-1.1	15.0	0.0	94.	14.	54.	17.1	9.2	2.3	138.4	0.00	.83	9.96	5.05	5.08	2.60
8/25/76	32.8	.6	16.7	0.0	96.	5.	51.	19.0	9.6	1.7	103.0	0.00	1.00	10.81	5.24	5.29	2.60
9/ 1/76	33.3	-.6	16.4	0.0	93.	15.	54.	18.7	10.1	1.8	106.2	0.00	.55	7.29	3.78	3.83	2.60
9/ 8/76	29.4	2.2	15.8	0.0	93.	22.	58.	18.0	10.4	1.7	101.4	0.00	.64	7.53	3.79	3.84	2.60
9/15/76	25.6	1.7	13.6	0.0	89.	15.	52.	15.6	8.4	2.4	143.2	0.00	.73	7.77	3.64	3.38	2.60
9/22/76	26.7	2.2	14.4	0.0	89.	13.	51.	16.5	8.4	2.1	125.5	0.00	.71	7.29	3.31	3.72	2.60
9/29/76	30.6	-1.7	14.4	0.0	93.	15.	54.	16.5	8.9	1.9	112.6	0.00	.59	6.19	2.84	2.64	2.70
10/ 6/76	28.3	-2.8	12.8	0.0	94.	14.	54.	14.8	8.0	2.1	122.3	0.00	.69	6.36	2.99	2.98	2.70
10/13/76	25.6	-6.1	9.7	0.0	98.	15.	57.	12.1	8.8	1.7	98.1	0.00	.58	5.32	2.25	2.46	2.70
10/20/76	21.1	-7.2	6.9	0.0	99.	15.	57.	10.0	5.7	2.3	135.2	0.00	.46	4.54	1.91	2.54	2.70
10/27/76	22.2	-9.4	6.4	0.0	100.	17.	59.	9.6	5.9	1.4	85.3	0.00	.50	4.42	1.73	2.36	2.70
11/ 3/76	24.4	-8.3	8.1	0.0	86.	24.	55.	10.8	5.9	1.1	75.6	0.00	.44	3.93	1.49	2.36	1.90
11/10/76	21.7	-8.3	6.7	0.0	100.	32.	66.	9.8	6.3	2.0	135.2	0.00	.20	2.70	1.24	1.78	1.90
11/17/76	20.6	-8.3	6.1	0.0	100.	33.	67.	9.4	6.3	1.3	85.3	0.00	.41	3.28	1.14	.03	1.90
11/25/76	20.0	-17.8	1.1	0.0	95.	28.	62.	6.6	4.1	1.8	115.8	0.00	.24	2.55	1.00	.84	1.90
12/ 1/76	19.4	-17.8	.8	0.0	100.	30.	65.	6.5	4.2	1.0	69.2	0.00	.38	2.89	.94	.96	1.90
12/ 8/76	18.3	-15.0	1.7	0.0	100.	24.	62.	6.9	4.3	1.6	114.2	0.00	.37	2.74	.83	.84	1.90
12/15/76	12.8	-16.7	-1.9	0.0	100.	32.	66.	5.3	3.5	1.1	77.2	0.00	.30	2.58	.77	.86	1.90
12/22/76	15.0	-16.1	-.6	0.0	100.	26.	63.	5.9	3.7	1.0	72.4	0.00	.28	2.40	.81	.84	1.90
12/29/76	13.9	-13.3	.3	0.0	100.	29.	65.	6.2	4.0	2.7	191.5	0.00	.12	1.97	.88	.86	1.90

[illegible] FOR FERNLEY STATION NEVADA 1973

DATE (MOY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00, CASE A																	
1/ 2/73	9.4	-20.6	-5.6	-15.1	100.	16.	58.	4.1	1.9	1.2	75.6	0.00	.84	4.10	.63	.33	2.00
1/ 9/73	15.6	-8.3	3.6	-5.9	100.	22.	61.	7.9	3.9	1.2	77.2	0.00	.36	2.70	.77	.15	2.00
1/16/73	14.4	-12.8	.8	-9.3	100.	18.	59.	6.5	3.0	2.1	138.4	0.00	.17	2.18	.88	.84	2.00
1/23/73	6.1	-12.2	-3.1	-6.3	100.	40.	70.	4.9	3.8	3.7	238.1	0.00	.23	2.77	1.09	.43	2.00
1/30/73	10.6	-12.2	-.8	-8.6	100.	25.	63.	5.8	3.2	1.3	82.1	0.00	.69	4.10	1.24	0.00	2.00
2/ 6/73	10.9	-3.9	3.1	-4.8	94.	35.	64.	7.6	4.3	1.3	85.3	0.00	.63	4.45	1.41	.33	2.00
2/13/73	8.3	-8.9	-.3	-7.9	100.	31.	65.	6.0	3.4	1.5	98.1	0.00	.82	5.59	1.78	1.55	2.00
2/20/73	16.1	-6.7	4.7	-4.4	100.	24.	62.	8.6	4.3	1.7	107.8	0.00	.45	4.30	1.71	3.05	2.00
2/27/73	15.6	-2.8	6.4	-8.4	65.	18.	42.	9.6	3.2	3.2	206.0	0.00	.68	5.70	2.00	1.68	2.00
3/ 8/73	18.3	-5.6	6.4	-6.3	95.	18.	56.	9.6	3.8	3.7	236.5	0.00	.84	7.15	2.71	2.87	2.00
3/15/73	20.0	-6.7	6.7	-6.4	100.	16.	58.	9.8	3.8	2.2	141.6	0.00	.52	5.75	2.55	2.30	2.00
3/22/73	20.6	-5.0	7.8	-5.6	95.	17.	56.	10.6	4.0	2.6	170.6	0.00	.92	7.89	3.47	3.78	2.00
3/29/73	18.9	-3.9	7.5	-6.7	81.	17.	49.	10.4	3.7	2.1	133.5	0.00	.75	7.48	3.52	3.45	2.00
4/ 5/73	22.2	-8.3	6.9	-6.4	100.	14.	57.	10.0	3.8	1.8	115.8	0.00	.63	7.14	3.55	4.65	2.00
4/13/73	18.9	-3.3	7.8	-6.6	78.	17.	48.	10.6	3.7	1.8	115.8	0.00	.52	9.13	4.27	7.92	2.00
4/20/73	24.4	-4.4	10.0	-7.3	80.	12.	46.	12.3	3.5	2.8	181.8	0.00	.75	8.47	4.14	7.03	2.00
4/26/73	26.1	-.6	12.8	-4.5	75.	13.	44.	14.8	4.5	3.5	225.3	0.00	.63	7.87	4.09	6.60	2.00
5/ 4/73	25.6	2.8	14.2	-1.5	73.	17.	45.	16.2	5.5	2.5	164.1	0.00	.51	8.84	4.66	7.26	2.00
5/10/73	30.6	2.8	16.7	3.8	100.	18.	59.	19.0	8.1	1.6	101.4	0.00	.51	8.84	4.70	7.98	2.00
5/17/73	31.1	5.0	18.1	2.0	81.	16.	48.	20.7	7.1	2.1	133.5	0.00	.60	8.99	4.73	6.27	2.00
5/24/73	31.7	3.3	17.5	1.3	85.	14.	49.	20.0	6.6	2.0	127.1	0.00	.59	9.11	4.79	8.20	2.00
5/31/73	34.4	1.1	17.8	.3	94.	11.	53.	20.4	6.2	2.3	151.2	0.00	.68	9.95	5.11	8.20	2.00
6/ 7/73	35.6	6.1	21.1	.8	66.	11.	39.	25.1	6.5	2.8	180.2	0.00	.47	8.23	4.39	11.79	2.00
6/14/73	34.4	2.8	18.5	-3.0	66.	9.	37.	21.5	4.9	2.5	159.3	0.00	.73	10.66	5.32	8.92	2.00
6/21/73	36.1	8.9	22.5	3.8	71.	13.	42.	27.3	8.1	2.1	136.8	0.00	.48	8.38	4.55	9.63	2.00
6/28/73	36.7	5.6	21.1	1.9	78.	11.	44.	25.1	7.0	2.1	133.5	0.00	.86	11.59	5.77	11.15	2.00
7/ 5/73	38.3	13.9	26.1	4.8	54.	14.	34.	33.9	8.6	1.6	103.0	0.00	.80	11.00	5.47	8.99	2.00
7/12/73	40.6	6.7	23.6	8.0	100.	14.	57.	29.2	10.7	1.4	88.5	0.00	.56	9.08	4.91	10.64	2.00
7/19/73	40.0	8.3	24.2	4.9	79.	12.	45.	30.2	8.7	1.7	111.0	0.00	.60	10.69	5.33	6.07	2.00
7/26/73	38.9	7.2	23.1	6.5	95.	17.	55.	28.2	9.5	2.2	140.0	0.00	.75	10.06	5.12	8.92	2.00
8/ 2/73	35.0	11.1	23.1	6.2	72.	17.	44.	28.2	8.7	2.4	154.5	0.00	.68	9.28	4.74	9.38	2.00
8/ 9/73	36.7	9.4	23.1	4.8	73.	14.	44.	28.4	8.7	1.7	109.4	0.00	.84	10.34	4.98	9.42	2.00
8/16/73	33.9	1.7	17.8	1.8	100.	13.	57.	20.4	7.0	2.3	148.0	0.00	.83	10.00	4.78	9.04	2.00
8/23/73	33.3	8.3	21.1	3.0	67.	15.	41.	25.1	7.6	1.7	111.0	0.00	.87	9.91	4.52	9.74	2.00
8/30/73	33.9	2.2	18.1	.3	87.	12.	49.	20.7	6.2	2.1	135.2	0.00	.93	9.86	4.30	6.53	2.00
9/ 6/73	33.3	4.4	18.9	1.9	84.	14.	49.	21.8	7.0	1.4	91.7	0.00	.84	8.93	3.91	5.85	2.00
9/13/73	31.1	5.6	18.3	-.6	65.	13.	39.	21.1	5.9	2.6	167.3	0.00	.72	7.74	3.28	8.46	2.00
9/20/73	26.7	-2.2	12.2	-2.1	100.	20.	64.	14.2	7.1	2.0	130.3	0.00	.54	6.27	2.97	5.12	2.00
9/27/73	31.1	-5.6	12.8	-4.6	100.	10.	55.	14.8	4.4	1.3	82.1	0.00	.60	6.22	2.56	3.78	2.00
10/ 4/73	26.7	-5.0	10.6	-5.9	97.	11.	54.	12.8	4.0	1.5	104.6	0.00	.65	6.12	2.36	2.73	2.00
10/11/73	30.0	0.0	15.0	-2.1	86.	12.	49.	17.1	5.3	.8	49.9	0.00	.74	6.22	2.13	3.81	2.00
10/18/73	25.6	-4.4	10.6	-3.4	100.	15.	57.	12.8	4.8	2.1	138.4	0.00	.38	4.11	1.69	3.84	2.00
10/25/73	22.8	-6.7	8.1	-7.4	92.	12.	52.	10.8	3.4	1.5	96.5	0.00	.75	5.47	1.60	3.05	2.00
11/ 2/73	20.0	-10.6	4.7	-1.6	100.	24.	68.	8.6	5.5	1.7	112.6	0.00	.54	5.25	1.53	2.51	2.00
11/ 9/73	22.8	-2.8	10.0	-2.6	100.	18.	59.	12.3	5.1	.9	61.1	0.00	.61	4.18	1.13	3.99	2.00
11/15/73	14.4	-6.1	4.2	-14.3	53.	12.	32.	8.2	2.2	2.1	135.2	0.00	.61	3.91	.79	2.39	2.00
11/24/73	17.2	-7.2	5.0	-9.6	83.	15.	49.	8.7	3.0	.7	45.1	0.00	.71	4.03	.67	1.27	2.00
11/29/73	18.9	-8.9	5.0	-10.9	90.	13.	52.	8.7	2.8	.9	57.9	0.00	.79	4.13	.52	1.27	2.00
12/ 6/73	17.2	-12.6	2.2	-11.2	95.	16.	56.	7.2	3.1	1.0	67.6	0.00	.32	2.52	.78	1.02	2.00
12/13/73	15.0	-10.6	2.2	-8.9	100.	15.	58.	7.3	2.6	.5	35.4	0.00	.82	3.83	.29	1.02	2.00
12/20/73	12.2	-8.9	1.7	-10.0	92.	20.	56.	6.9	2.9	1.5	96.5	0.00	.82	3.86	.35	1.04	2.00
12/27/73	16.7	-22.2	-2.8	-13.0	100.	12.	56.	5.0	2.3	1.5	96.5	0.00	.78	3.84	.53	.99	2.00

TABLE 71. CLIMATOLOGICAL DATA FOR FERNLEY STATION NEVADA 1974

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 3/74	4.4	-17.8	-6.7	-17.3	100.	19.	59.	3.7	1.6	1.0	64.4	0.00	.84	4.11	.63	1.04	2.00
1/10/74	20.0	-17.8	1.1	-10.9	100.	11.	56.	6.6	2.7	2.0	131.9	0.00	.58	3.40	.67	1.78	2.00
1/17/74	17.2	-9.4	3.9	-11.0	88.	13.	51.	8.1	2.7	2.0	130.3	0.00	.79	4.25	.61	.86	2.00
1/24/74	15.6	-7.2	4.2	-12.5	66.	13.	40.	8.2	2.4	2.0	130.3	0.00	.79	4.56	.80	2.11	2.00
1/31/74	16.1	-10.6	2.8	-15.3	68.	10.	39.	7.5	1.9	2.7	173.8	0.00	1.00	6.51	1.64	1.78	2.00
2/ 7/74	15.0	-11.1	1.9	-10.9	100.	16.	58.	7.0	2.7	1.8	114.2	0.00	1.00	7.02	2.20	1.02	2.00
2/14/74	24.4	-10.6	6.9	-14.8	76.	7.	41.	10.0	2.1	3.2	204.3	0.00	.87	5.78	1.34	2.46	2.00
2/21/74	23.3	-7.2	8.1	-10.8	75.	9.	42.	10.8	2.7	3.5	226.9	0.00	.87	6.21	1.71	4.57	2.00
2/28/74	21.1	-10.6	5.3	-12.7	84.	9.	47.	8.9	2.3	4.3	280.0	0.00	1.00	8.33	2.97	3.81	2.00
3/ 7/74	17.8	-7.8	5.0	-10.0	84.	14.	49.	8.7	2.9	2.2	141.6	0.00	1.00	7.96	2.79	3.56	2.00
3/14/74	21.1	-8.3	6.4	-10.0	88.	11.	50.	9.6	2.9	1.7	112.6	0.00	1.00	8.70	3.29	4.32	2.00
3/21/74	20.6	-5.0	7.8	-.8	100.	24.	62.	10.6	2.8	3.5	226.9	0.00	1.00	9.04	3.87	5.84	2.00
3/28/74	22.2	-7.2	7.5	-12.7	65.	9.	37.	10.4	2.3	4.6	297.7	0.00	1.00	9.57	3.79	6.60	2.00
4/ 4/74	25.0	-1.7	11.7	-13.8	39.	7.	23.	13.7	2.1	3.9	255.8	0.00	1.00	11.29	4.84	7.87	2.00
4/11/74	22.2	-8.3	6.9	-15.6	56.	7.	31.	10.0	1.8	2.7	175.4	0.00	1.00	12.89	6.22	6.60	2.00
4/18/74	29.4	-3.9	12.8	-15.0	42.	5.	23.	14.3	1.9	3.5	223.7	0.00	1.00	11.70	6.04	6.35	2.00
4/25/74	26.1	-3.9	11.1	-12.7	51.	7.	29.	13.2	2.3	3.2	144.8	0.00	.64	8.47	3.95	6.25	2.00
5/ 2/74	30.0	2.8	16.4	-9.2	41.	7.	24.	18.7	3.1	2.6	167.3	0.00	1.00	13.80	6.66	9.12	2.00
5/ 9/74	28.9	.6	14.7	-12.4	37.	6.	22.	16.8	2.4	3.4	220.4	0.00	1.00	14.47	7.11	9.55	2.00
5/16/74	26.1	-3.9	11.1	-13.6	47.	6.	27.	13.2	2.1	2.7	173.8	0.00	1.00	13.18	6.29	5.84	2.00
5/23/74	32.8	3.9	18.3	-7.3	44.	7.	25.	21.1	3.5	2.3	149.6	0.00	1.00	14.42	7.10	9.22	2.00
5/30/74	30.6	3.3	16.9	-6.6	48.	9.	28.	19.3	3.7	2.2	141.6	0.00	1.00	14.40	7.19	8.38	2.00
6/ 6/74	35.6	1.1	18.3	2.4	100.	13.	56.	21.1	3.3	2.1	136.8	0.00	1.00	14.67	7.81	9.42	2.00
6/13/74	35.6	6.1	20.8	3.4	83.	13.	48.	24.6	7.8	.8	231.7	0.00	.79	11.14	5.71	12.15	2.00
6/20/74	33.3	6.1	19.7	1.5	72.	13.	43.	23.5	6.8	2.3	149.6	0.00	.86	11.66	5.86	10.67	2.00
6/27/74	37.2	5.6	21.4	4.9	96.	14.	55.	25.5	8.7	1.8	119.1	0.00	.84	11.41	5.85	9.42	2.00
7/ 4/74	34.4	1.7	18.1	4.4	100.	15.	58.	20.7	8.4	2.6	168.9	0.00	.67	9.93	5.29	8.74	2.00
7/11/74	33.3	7.2	20.3	5.3	87.	17.	52.	23.8	8.9	1.8	115.8	0.00	.83	11.17	5.75	9.14	2.00
7/18/74	37.2	11.1	24.2	8.3	83.	17.	50.	30.2	11.0	1.4	90.1	0.00	.73	10.69	5.55	8.62	2.00
7/25/74	37.8	13.3	25.6	12.2	93.	22.	57.	32.8	14.2	2.1	133.5	0.00	.59	8.82	4.96	9.25	2.00
8/ 1/74	34.4	10.0	22.2	7.6	85.	19.	52.	26.8	10.5	4.1	263.9	0.00	.74	9.83	5.05	10.41	2.00
8/ 8/74	32.2	5.6	18.9	5.2	97.	18.	58.	21.8	8.8	1.8	117.5	0.00	.82	10.20	5.11	8.56	2.00
8/15/74	32.8	2.2	17.5	.9	91.	13.	52.	20.0	6.5	1.9	120.7	0.00	.84	10.13	5.81	7.59	2.00
8/22/74	33.3	2.2	17.8	7.4	100.	20.	60.	20.4	10.3	1.3	86.9	0.00	.81	9.50	4.76	7.44	2.00
8/29/74	33.9	8.9	21.4	7.4	91.	20.	55.	25.5	10.3	1.3	83.7	0.00	.81	9.10	4.35	7.09	2.00
9/ 5/74	32.2	-1.1	15.6	6.2	100.	20.	60.	17.7	9.5	1.3	86.9	0.00	.80	8.70	4.19	6.63	2.00
9/12/74	32.2	-1.7	15.3	-4.8	84.	9.	47.	17.4	4.6	.8	49.9	0.00	.79	8.25	4.12	6.12	2.00
9/19/74	32.8	-2.8	17.8	-4.9	100.	17.	59.	20.4	8.7	.8	51.5	0.00	.78	7.75	3.40	6.26	2.00
9/26/74	31.1	-1.7	14.7	3.3	100.	17.	59.	16.8	7.7	1.2	80.5	0.00	.64	7.67	3.20	6.05	2.00
10/ 3/74	25.0	-3.3	10.8	4.1	100.	26.	63.	13.0	8.2	1.2	77.2	0.00	.61	5.97	2.68	5.23	2.00
10/10/74	26.7	-1.7	12.5	-2.3	96.	15.	55.	14.5	5.2	.9	61.1	0.00	.86	6.85	2.36	4.06	2.00
10/17/74	27.2	-5.0	11.1	-.8	100.	16.	58.	13.2	5.8	1.2	77.2	0.00	.82	6.26	2.12	3.89	2.00
10/24/74	21.1	-1.7	9.7	.3	100.	25.	62.	12.1	6.2	1.9	122.3	0.00	.32	3.60	1.57	2.39	2.00
10/31/74	19.4	-7.2	6.1	-3.6	100.	21.	60.	9.4	4.7	1.7	107.8	0.00	.45	3.93	1.43	2.03	2.00
11/ 7/74	20.0	-6.7	6.7	-3.5	100.	20.	60.	9.8	4.7	1.1	69.2	0.00	.75	4.83	1.30	.93	2.00
11/14/74	20.0	-7.2	6.4	-4.4	100.	19.	59.	9.6	4.4	1.9	120.7	0.00	.73	4.37	.93	1.60	2.00
11/21/74	17.8	-10.0	3.9	-7.4	100.	17.	59.	8.1	3.5	2.3	149.6	0.00	.76	4.27	.82	2.03	2.00
11/27/74	13.9	-9.4	2.2	-7.3	100.	22.	61.	7.2	3.5	1.4	93.3	0.00	.53	3.37	.80	1.42	2.00
12/ 5/74	12.2	-10.6	.8	-3.3	100.	34.	67.	6.5	4.2	.7	45.1	0.00	.64	3.52	.78	.53	2.00
12/12/74	13.9	-8.9	2.5	-5.2	100.	26.	63.	7.3	4.2	1.4	90.1	0.00	.46	2.81	.62	1.09	2.00
12/19/74	15.6	-12.8	1.4	-12.1	100.	14.	57.	6.8	2.4	2.1	136.8	0.00	.73	3.59	.35	.51	2.00
12/26/74	15.6	-22.8	-3.6	-14.8	100.	11.	55.	4.7	1.9	2.1	136.8	0.00	.63	3.38	.57	.53	2.00

TABLE 72. CLIMATOLOGICAL DATA FOR FERNLEY STATION NEVADA 1975

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 2/75	18.3	-22.2	-1.9	-7.5	100.	17.	58.	5.3	3.5	2.7	173.8	0.00	.87	4.18	.68	.53	2.00
1/ 9/75	13.9	-8.3	2.8	-4.9	100.	27.	63.	7.5	4.3	1.1	74.0	0.00	.91	4.42	.57	.53	2.00
1/16/75	19.4	-7.8	5.8	-4.3	100.	20.	60.	9.3	4.4	1.0	67.6	0.00	1.00	5.13	.85	1.00	2.00
1/24/75	22.2	-15.6	3.3	-11.1	100.	10.	55.	7.8	4.6	2.7	177.0	0.00	.91	4.98	.84	1.63	2.00
1/31/75	16.7	-10.6	3.1	-5.4	100.	21.	61.	7.6	4.8	2.7	228.5	0.00	.64	4.32	1.25	1.63	2.00
2/ 7/75	13.3	-11.1	1.1	-9.4	100.	31.	66.	7.6	4.8	2.7	177.0	0.00	.45	3.77	1.44	1.42	2.00
2/14/75	17.8	-12.2	2.8	-9.2	100.	15.	57.	7.5	4.1	2.9	185.0	0.00	.84	5.64	1.63	1.96	2.00
2/21/75	21.1	-12.8	4.2	-6.6	100.	15.	57.	8.2	4.3	2.9	185.0	0.00	.94	6.53	2.05	2.44	2.00
2/28/75	21.1	-12.8	4.2	-3.3	100.	19.	60.	8.2	4.8	1.0	67.6	0.00	.60	5.37	2.17	3.89	2.00
3/ 7/75	14.4	-9.4	2.5	-4.8	100.	26.	63.	7.3	4.3	2.1	135.2	0.00	.47	5.15	2.35	2.21	2.00
3/14/75	28.9	-7.8	10.6	-6.3	100.	10.	55.	8.8	3.8	2.5	162.5	0.00	.74	6.95	2.70	2.70	2.00
3/21/75	20.0	-13.3	3.3	-8.7	100.	14.	57.	7.8	3.5	4.4	275.1	0.00	.68	7.02	3.09	2.72	2.00
3/28/75	19.4	-13.3	3.1	-11.7	100.	11.	56.	7.6	3.5	4.2	284.8	0.00	.92	8.94	3.78	3.05	2.00
4/ 4/75	13.9	-7.8	3.1	-6.9	100.	23.	61.	7.6	3.6	3.2	206.0	0.00	.55	6.92	3.41	2.26	2.00
4/11/75	20.0	-4.4	7.8	-6.9	83.	16.	49.	10.6	3.6	2.2	144.8	0.00	.95	9.33	4.24	5.74	2.00
4/18/75	19.4	-2.2	8.6	-4.4	83.	19.	51.	11.2	4.3	3.3	214.0	0.00	.66	8.33	4.09	6.10	2.00
4/25/75	22.8	-7.2	7.8	-6.7	100.	14.	57.	10.6	4.3	2.7	177.0	0.00	.82	9.83	4.72	6.10	2.00
5/ 2/75	24.4	-2.2	11.1	-3.7	89.	15.	52.	13.2	5.4	3.3	215.6	0.00	.75	9.62	4.74	5.82	2.00
5/ 9/75	29.4	-1.1	14.3	-1.7	92.	13.	53.	16.5	5.5	2.3	151.2	0.00	.85	10.73	5.23	6.64	2.00
5/16/75	27.2	-1.1	13.9	-2.0	94.	13.	53.	15.9	5.5	3.1	202.7	0.00	.64	9.28	4.87	6.56	2.00
5/23/75	28.9	-1.1	13.9	-2.0	94.	13.	53.	15.9	5.5	2.2	144.8	0.00	.87	11.32	5.64	8.36	2.00
5/30/75	40.0	2.2	21.1	3.3	100.	12.	56.	25.1	8.5	1.9	122.3	0.00	.75	10.51	5.42	8.64	2.00
6/ 6/75	36.1	2.2	19.2	3.9	100.	13.	56.	22.2	8.7	3.6	231.7	0.00	.95	12.31	6.20	8.88	2.00
6/13/75	34.4	3.3	18.9	3.9	100.	15.	57.	22.6	8.1	3.7	238.1	0.00	.52	8.76	4.80	10.43	2.00
6/20/75	33.3	5.6	19.4	1.8	77.	14.	55.	21.8	7.0	3.3	215.6	0.00	.75	10.73	5.51	9.63	2.00
6/27/75	33.3	4.4	18.9	3.6	94.	15.	55.	22.6	7.9	2.9	186.6	0.00	.93	12.19	6.20	10.92	2.00
7/ 4/75	37.2	12.8	25.0	11.0	89.	21.	55.	31.7	13.1	1.7	112.6	0.00	.79	10.86	5.85	9.56	2.00
7/11/75	36.1	7.8	21.9	10.3	100.	21.	60.	26.4	12.1	1.9	123.9	0.00	.75	10.51	5.71	8.46	2.00
7/18/75	37.8	15.6	26.7	9.6	69.	19.	44.	35.2	12.2	1.9	120.7	0.00	.80	10.78	5.61	10.16	2.00
7/25/75	40.6	5.6	23.1	2.6	81.	10.	45.	28.3	7.4	2.2	140.0	0.00	.81	10.56	5.11	11.68	2.00
8/ 1/75	40.0	5.0	22.5	3.1	87.	10.	49.	27.3	7.6	1.8	115.8	0.00	.84	10.66	5.12	11.02	2.00
8/ 8/75	33.3	7.2	20.3	-5.9	39.	8.	24.	22.8	4.0	1.8	115.8	0.00	.67	9.06	4.17	7.87	2.00
8/15/75	37.8	2.8	20.3	-9.6	34.	5.	22.	23.8	3.0	1.9	120.7	0.00	.61	8.36	3.74	5.62	2.00
8/22/75	36.1	7.2	21.7	-7.2	35.	6.	20.	25.9	3.6	1.8	115.8	0.00	.86	9.84	4.00	7.20	2.00
8/29/75	31.7	1.7	16.7	-9.2	44.	7.	25.	19.0	3.1	1.3	82.1	0.00	.69	9.47	3.85	6.25	2.00
9/ 5/75	33.3	3.3	18.3	-6.8	48.	7.	27.	21.1	3.7	1.4	90.1	0.00	.73	8.21	3.38	5.08	2.00
9/13/75	28.9	7.2	18.1	-6.8	36.	7.	23.	20.7	3.7	1.3	83.7	0.00	.81	8.30	3.18	5.08	2.00
9/20/75	31.1	2.2	16.7	-7.2	49.	8.	28.	19.0	3.5	1.1	69.2	0.00	.83	7.37	2.92	6.76	2.00
9/27/75	29.4	2.3	16.4	-7.9	44.	8.	26.	18.7	3.4	1.1	74.0	0.00	.81	7.43	2.56	6.10	2.00
10/ 4/75	37.2	-2.2	17.4	-12.2	46.	4.	25.	20.0	2.5	2.7	173.8	0.00	.66	6.17	1.95	5.03	2.00
10/11/75	26.1	-3.3	11.4	-11.1	53.	7.	30.	13.5	2.4	1.1	74.0	0.00	.72	6.09	1.93	3.83	2.00
10/18/75	23.3	-9.4	6.9	-3.3	100.	17.	58.	10.0	4.8	2.0	131.9	0.00	.71	5.68	2.03	3.33	2.00
10/26/75	23.3	-0.9	7.2	-4.5	100.	15.	58.	10.2	4.3	2.3	149.6	0.00	.70	5.19	1.65	3.33	2.00
11/ 1/75	23.3	-5.6	8.9	-1.9	100.	19.	59.	11.4	5.3	1.3	83.7	0.00	.72	5.02	1.51	2.90	2.00
11/ 8/75	22.8	-11.1	5.8	-5.0	100.	15.	58.	9.3	4.2	2.0	127.1	0.00	.81	5.02	1.24	2.54	2.00
11/15/75	15.6	-14.4	.6	-6.9	100.	21.	60.	6.4	3.6	1.7	112.6	0.00	.80	4.56	1.07	1.19	2.00
11/22/75	16.1	-12.2	1.9	-5.9	100.	21.	61.	7.0	3.9	1.6	101.4	0.00	.52	3.42	.93	1.13	2.00
11/29/75	13.3	-5.0	4.2	-1.9	100.	35.	67.	8.2	5.3	1.4	88.5	0.00	.63	3.62	.84	1.19	2.00
12/ 6/75	15.0	-7.8	3.6	-6.1	100.	23.	61.	7.9	3.9	1.3	83.7	0.00	.70	3.66	.58	1.63	2.00
12/13/75	6.7	-14.4	-3.9	-10.8	100.	28.	64.	4.6	2.3	.5	35.4	0.00	1.00	4.42	.50	.69	2.00
12/20/75	13.9	-11.7	1.1	-4.9	100.	27.	63.	6.6	3.3	.9	56.3	0.00	.70	3.52	.57	.69	2.00
12/27/75	13.3	-15.6	-1.1	-11.0	100.	17.	59.	5.6	2.7	1.6	101.4	0.00	.60	3.30	.60	1.17	2.00

TABLE 73. CLIMATOLOGICAL DATA FOR NEWLANDS FIELD LAB FALLON 1974

VALUES OF FETCH 200.00,CASE A

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
1/ 4/74	12.2	-15.6	-1.7	-9.5	100.	21.	60.	5.4	3.0	.9	57.3	0.00	.81	4.11	.70	1.27	2.00
1/11/74	11.1	-12.8	-.8	-2.5	100.	38.	69.	5.8	5.1	3.3	211.3	0.00	.56	3.39	.96	1.52	2.00
1/18/74	15.0	-6.1	4.4	-.3	100.	35.	68.	8.4	6.0	1.5	93.5	0.00	.76	4.25	1.02	.76	2.00
1/25/74	17.2	-10.0	3.6	-7.6	100.	24.	62.	7.9	4.8	1.3	84.2	0.00	.76	4.56	1.17	1.75	2.00
2/ 1/74	15.6	-8.3	3.6	-5.6	100.	23.	61.	7.9	4.1	2.1	133.5	0.00	1.00	6.51	1.94	1.02	2.00
2/ 8/74	16.1	-6.7	4.7	-5.8	100.	22.	61.	8.6	4.0	1.0	65.6	0.01	1.00	7.03	2.26	1.02	2.00
2/15/74	17.8	-13.3	2.2	-6.3	100.	24.	62.	7.2	4.8	2.1	133.3	0.00	.84	5.78	1.93	2.03	2.00
2/22/74	17.2	-7.8	4.7	-3.7	100.	19.	59.	8.8	3.7	2.7	173.3	0.00	.84	6.20	2.05	4.57	2.00
3/ 1/74	18.3	-5.0	6.7	-3.0	100.	23.	62.	9.8	4.7	3.7	238.3	0.00	1.00	8.33	2.28	4.57	2.00
3/ 8/74	20.6	-2.8	7.6	-.9	100.	22.	62.	10.6	4.8	1.8	116.8	0.00	.98	7.95	3.09	3.81	2.00
3/15/74	20.0	-4.4	7.8	-.8	100.	25.	62.	11.4	5.0	1.2	79.0	0.00	1.00	8.71	3.57	4.32	2.00
3/22/74	22.5	-2.8	11.4	-2.7	100.	16.	56.	10.6	5.8	2.2	140.0	0.00	1.00	9.05	3.87	5.84	2.00
3/29/74	25.0	-2.0	10.0	-3.3	100.	15.	58.	13.5	5.8	4.1	266.6	0.00	1.00	9.57	4.01	6.60	2.00
4/ 5/74	23.9	-2.2	10.8	-4.8	85.	15.	50.	12.3	4.8	3.3	215.9	0.00	1.00	11.29	4.34	7.87	2.00
4/12/74	25.6	-2.2	11.7	-.8	100.	18.	59.	13.0	5.8	1.8	119.9	0.00	1.00	12.88	4.44	6.60	2.00
4/19/74	30.8	-2.4	17.2	-.8	72.	14.	43.	13.7	5.8	2.5	161.9	0.00	1.00	11.69	4.69	6.10	2.00
4/26/74	27.8	1.1	14.4	-.9	98.	17.	58.	16.5	6.1	1.8	114.9	0.00	.63	8.46	4.16	6.86	2.00
5/ 3/74	24.4	-1.1	11.7	-1.1	100.	18.	59.	13.7	5.6	2.6	169.9	0.00	1.00	13.80	4.24	9.14	2.00
5/10/74	32.2	1.6	18.9	-.9	63.	12.	38.	13.8	5.7	2.6	170.9	0.00	1.00	14.47	4.76	9.91	2.00
5/17/74	31.6	5.6	18.3	-.8	95.	19.	57.	21.1	8.6	1.8	114.1	0.00	1.00	13.17	4.47	7.11	2.00
5/24/74	35.1	1.0	18.3	-.7	100.	16.	58.	21.1	9.2	1.5	97.0	0.00	1.00	14.40	4.76	10.16	2.00
5/31/74	37.2	5.0	21.1	4.9	96.	13.	55.	25.1	8.4	1.7	66.6	0.00	1.00	14.68	4.83	10.16	2.00
6/ 7/74	33.7	4.4	19.2	3.9	97.	15.	56.	22.2	8.1	3.7	239.7	0.00	.79	11.14	4.81	12.95	2.00
6/14/74	35.6	6.4	21.7	6.9	74.	12.	43.	25.9	7.3	1.6	101.7	0.00	.86	11.67	5.03	9.91	2.00
6/21/74	35.0	4.8	19.7	6.2	100.	18.	59.	23.0	7.3	1.5	97.5	0.00	.84	11.41	5.33	9.91	2.00
6/28/74	33.8	7.8	20.8	7.7	96.	19.	58.	24.6	10.1	1.2	118.4	0.00	.67	9.92	3.69	10.41	2.00
7/ 5/74	33.7	12.4	25.3	9.5	72.	16.	44.	32.2	10.3	1.25	78.5	0.00	.83	11.17	4.69	8.13	2.00
7/12/74	33.5	14.2	25.0	9.7	72.	21.	56.	31.1	9.9	1.7	95.1	0.00	.80	10.69	4.59	10.41	2.00
7/19/74	33.2	12.4	23.1	12.2	100.	27.	63.	28.2	11.2	1.7	111.2	0.00	.59	8.82	3.91	8.38	2.00
7/26/74	32.2	8.6	18.9	12.0	100.	29.	65.	21.8	9.7	1.5	97.3	0.00	.74	9.83	4.41	7.87	2.00
8/ 2/74	32.6	5.6	18.9	5.2	97.	18.	58.	21.8	8.8	1.4	93.5	0.00	.82	10.21	4.10	8.89	2.00
8/ 9/74	33.4	10.6	22.2	7.4	84.	16.	44.	26.8	8.9	1.2	79.2	0.00	.85	10.13	4.86	8.62	2.00
8/16/74	33.4	10.8	22.2	7.4	84.	19.	51.	26.8	10.3	1.1	73.7	0.00	.81	9.50	4.60	8.13	2.00
8/23/74	32.2	2.2	17.5	7.4	100.	21.	61.	20.7	10.3	1.0	63.7	0.00	.81	9.10	4.47	7.62	2.00
8/30/74	30.7	2.6	16.4	6.2	100.	22.	61.	21.1	9.5	1.2	79.0	0.00	.81	8.27	4.16	6.86	2.00
9/ 6/74	31.1	5.0	18.3	2.9	85.	16.	51.	21.1	8.7	1.0	64.7	0.00	.80	7.76	4.48	6.86	2.00
9/13/74	29.4	6	15.2	4.3	100.	24.	62.	17.4	8.7	.8	50.4	0.00	.78	6.66	3.27	5.84	2.00
9/20/74	25.6	-1.1	12.2	3.3	100.	24.	62.	14.2	7.7	1.2	76.4	0.00	.84	7.97	3.59	5.84	2.00
9/27/74	26.1	-1.7	13.9	3.3	100.	24.	62.	15.9	8.2	1.2	77.9	0.00	.61	5.25	2.70	5.08	2.00
10/ 4/74	26.7	-3.3	11.7	-2.3	100.	27.	57.	13.2	5.8	.9	60.4	0.00	.86	6.85	3.38	3.56	2.00
10/11/74	21.1	-.6	10.3	-.8	98.	29.	61.	12.5	5.8	2.0	132.4	0.00	.82	6.25	3.60	3.81	2.00
10/18/74	19.4	-2.8	8.4	3.8	100.	26.	61.	9.6	6.1	1.5	97.2	0.00	.31	2.70	1.70	3.81	2.00
10/25/74	15.0	-3.6	8.1	1.4	100.	28.	64.	10.8	6.3	1.9	121.5	0.00	.44	3.93	1.51	2.03	2.00
11/ 1/74	18.9	-5.3	6.9	1.2	100.	31.	65.	10.0	6.7	1.9	127.6	0.00	.75	6.37	1.46	2.03	2.00
11/ 8/74	15.0	-7.2	3.9	-1.6	100.	33.	67.	8.7	6.3	2.0	93.2	0.00	.75	4.27	1.18	2.79	2.00
11/15/74	13.3	-8.3	2.5	-3.9	100.	26.	63.	7.6	5.9	1.4	69.2	0.00	.54	3.37	.95	2.03	2.00
11/22/74	12.2	-8.9	1.7	-3.3	100.	32.	66.	7.5	4.8	1.1	45.2	0.00	.63	3.52	.90	1.27	2.00
11/29/74	12.8	-7.2	2.8	-3.3	100.	32.	66.	7.9	4.8	.7	45.4	0.00	.45	2.81	.75	.51	2.00
12/ 6/74	14.4	-11.1	1.7	-2.6	100.	31.	65.	7.2	5.3	1.6	105.4	0.00	.45	3.59	.72	.51	2.00
12/13/74	14.4	-12.8	2.2	-8.1	100.	17.	59.	3.0	2.2	2.1	138.7	0.00	.71	3.38	.49	.25	2.00
12/20/74	17.2	-12.8	-9.4	-13.4	100.	18.	59.	3.0	2.2	2.1	134.7	0.00	.61	3.38	.82	.25	2.00
12/27/74	9.4	-28.3															

LE 74. CLIMATOLOGICAL DATA FOR NEWLANDS FIELD LAB FALLON 1975

E (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
LUES OF ETO	H	00	0, CASE	8													
/ 3/75	10.6	-26.7	-8.1	-5.6	100.	32.	66.	3.3	4.0	2.3	145.9	0.00	.84	4.17	1.01	.25	2.00
/10/75	13.9	-10.0	1.9	-2.8	100.	31.	66.	3.5	5.0	1.3	85.9	0.00	.88	4.42	.84	.51	2.00
/17/75	14.4	-10.6	1.9	-2.2	100.	32.	66.	7.0	5.2	1.1	72.2	0.00	1.00	5.13	1.10	1.52	2.00
/24/75	19.4	-16.7	1.4	-9.1	100.	14.	57.	6.8	5.5	2.5	162.0	0.00	.90	4.99	1.03	1.78	2.00
/31/75	11.1	-8.9	1.1	-1.5	100.	42.	71.	6.6	3.3	3.9	254.4	0.00	.63	4.32	1.45	2.03	2.00
/ 8/75	15.0	-12.8	1.1	-6.5	100.	22.	61.	6.6	3.4	2.7	174.9	0.00	.43	3.77	1.43	1.78	2.00
/15/75	13.3	-13.9	0.0	-8.0	100.	21.	59.	6.1	3.5	3.0	195.2	0.00	.81	5.65	1.84	2.29	2.00
/22/75	18.3	-15.0	1.9	-5.6	100.	21.	60.	7.0	4.2	1.1	70.8	0.00	.91	6.52	2.25	2.03	2.00
/ 1/75	21.1	-9.4	5.8	-2.8	100.	22.	61.	9.4	5.2	2.1	134.4	0.00	.56	5.37	2.26	3.05	2.00
/ 8/75	15.0	-9.4	2.8	-6.1	100.	17.	58.	7.5	3.7	2.7	173.7	0.00	.46	5.15	2.34	2.03	2.00
/15/75	20.0	-8.3	5.8	-6.1	100.	21.	60.	9.3	3.9	4.3	277.4	0.00	.72	6.96	2.92	5.84	2.00
/22/75	15.6	-15.6	0.0	-6.8	100.	23.	61.	6.1	3.7	3.9	319.4	0.00	.66	7.01	3.28	3.81	2.00
/29/75	20.8	-13.3	3.9	-9.2	100.	23.	61.	7.8	4.1	3.1	203.9	0.00	.90	8.94	3.89	5.08	2.00
/ 5/75	17.8	-10.0	3.8	-3.7	100.	23.	61.	8.1	4.7	2.4	155.1	0.00	.54	6.91	3.49	2.54	2.00
/12/75	18.3	-7.2	5.6	-3.1	100.	24.	62.	9.1	4.7	3.4	220.1	0.00	.84	9.33	4.48	5.33	2.00
/19/75	18.9	-2.8	8.3	-1.9	100.	17.	59.	11.0	5.3	3.4	218.2	0.00	.65	8.34	4.21	3.81	2.00
/26/75	21.1	-7.8	6.7	-4.9	100.	17.	59.	9.8	5.3	3.6	166.6	0.00	.81	9.82	4.84	6.35	2.00
/ 3/75	24.4	-5.0	9.7	-1.9	100.	17.	59.	12.1	5.3	2.6	227.5	0.00	.74	9.61	4.87	3.81	2.00
/10/75	28.9	-2.2	13.3	1.2	100.	18.	59.	15.3	6.6	2.4	153.7	0.00	.84	10.73	5.42	6.10	2.00
/17/75	27.8	-1.7	13.1	1.2	100.	20.	60.	15.0	6.6	2.2	198.7	0.00	.63	9.27	4.92	8.89	2.00
/24/75	25.6	-1.7	11.9	1.3	100.	22.	61.	14.8	6.6	2.1	143.4	0.00	.86	11.33	5.86	6.60	2.00
/31/75	30.6	3.3	16.9	3.3	100.	19.	59.	18.3	9.6	1.7	109.6	0.00	.75	10.50	5.64	8.13	2.00
/ 7/75	31.7	3.3	17.5	3.3	100.	17.	59.	20.0	8.7	1.5	223.8	0.00	.94	12.30	6.38	8.13	2.00
/14/75	34.4	5.0	19.7	5.3	100.	17.	59.	23.0	9.0	2.2	188.7	0.00	.51	8.76	4.85	8.38	2.00
/21/75	36.0	5.9	15.3	4.3	100.	18.	59.	17.4	7.8	2.4	183.1	0.00	.75	10.72	5.71	8.89	2.00
/28/75	30.0	3.9	16.9	4.3	100.	20.	60.	19.3	6.3	1.4	155.6	0.00	.93	12.20	6.32	8.89	2.00
/ 5/75	41.7	12.2	26.9	11.6	96.	17.	57.	35.6	13.7	1.5	93.0	0.00	.78	10.86	5.82	9.91	2.00
/12/75	35.0	8.3	21.6	11.8	100.	25.	62.	35.9	13.9	1.5	94.1	0.00	.75	10.50	5.81	8.64	2.00
/19/75	37.8	13.3	25.6	11.7	100.	21.	56.	33.8	13.8	1.4	89.0	0.00	.81	10.78	5.76	8.13	2.00
/26/75	40.0	14.4	27.2	11.6	100.	22.	56.	33.8	8.5	1.5	96.9	0.00	.81	10.56	5.25	9.91	2.00
/ 2/75	35.0	13.3	24.3	11.7	98.	24.	61.	33.6	7.6	1.4	93.3	0.00	.85	10.67	5.24	10.67	2.00
/ 9/75	35.6	8.3	22.0	6.1	86.	18.	52.	26.2	9.8	1.4	88.0	0.00	.67	9.06	4.62	9.14	2.00
/16/75	38.9	5.6	22.3	6.8	100.	16.	51.	26.6	9.9	2.1	133.2	0.00	.61	8.37	4.29	7.87	2.00
/23/75	38.3	5.0	21.9	5.8	100.	16.	51.	26.4	9.3	1.7	108.6	0.00	.86	9.84	4.74	6.35	2.00
/30/75	31.7	2.8	17.2	2.8	100.	18.	58.	22.6	7.5	1.1	70.2	0.00	.87	9.47	4.35	6.11	2.00
/ 6/75	35.0	8.3	21.6	6.1	97.	18.	58.	25.2	9.9	1.4	90.1	0.00	.73	8.20	3.86	6.35	2.00
/13/75	30.0	6.1	19.4	6.8	86.	22.	59.	25.5	9.4	1.3	83.8	0.00	.80	8.30	3.76	6.60	2.00
/20/75	30.0	3.3	16.4	1.8	93.	16.	54.	18.7	7.6	.9	57.6	0.00	.82	7.98	3.35	5.33	2.00
/27/75	28.3	-3.3	12.5	-1.4	100.	16.	55.	18.4	7.0	1.2	68.7	0.00	.80	7.42	3.00	5.84	2.00
/ 5/75	28.3	-5.0	11.7	-1.4	100.	16.	55.	14.5	6.5	1.8	179.6	0.00	.66	6.17	2.48	5.33	2.00
/12/75	25.6	-2.8	7.5	-4.6	100.	12.	52.	13.5	5.5	1.8	175.0	0.00	.72	6.09	2.26	3.33	2.00
/19/75	24.4	-3.3	7.1	-4.6	100.	11.	54.	10.6	5.0	1.8	117.6	0.00	.71	5.69	1.97	3.05	2.00
/26/75	22.8	-11.7	5.6	-5.3	100.	15.	55.	9.1	4.2	2.2	140.5	0.00	.68	5.19	1.73	3.05	2.00
/ 2/75	21.7	-11.1	5.3	-9.9	100.	15.	55.	10.6	4.4	1.1	68.4	0.00	.72	5.01	1.73	2.29	2.00
/ 9/75	21.7	-11.1	4.9	-10.2	100.	18.	59.	10.6	4.4	1.8	117.8	0.00	.81	5.02	1.49	2.29	2.00
/16/75	22.2	-14.4	3.8	-10.2	100.	18.	59.	7.0	3.3	2.0	130.7	0.00	.79	4.55	.87	2.77	2.00
/23/75	22.2	-14.4	4.2	-10.2	100.	19.	59.	8.1	3.1	1.6	102.3	0.00	.51	3.41	.93	2.27	2.00
/30/75	24.4	-13.3	5.6	-9.9	100.	21.	61.	9.4	3.4	1.6	102.7	0.00	.62	3.63	.93	2.27	2.00
/ 6/75	25.6	-12.2	6.7	-4.4	100.	14.	57.	9.4	3.7	1.1	73.6	0.00	.69	3.66	.73	2.27	2.00
/13/75	26.1	-12.2	6.8	-3.7	100.	25.	63.	7.8	2.4	.9	57.1	0.00	1.00	3.42	.49	2.27	2.00
/20/75	26.7	-11.7	7.3	-4.0	100.	26.	63.	6.0	3.6	1.0	61.6	0.00	.60	3.53	.61	2.27	2.00
/27/75	27.8	-8.9	9.3	-3.7	100.	22.	61.	5.4	3.2	1.7	108.9	0.00	.58	3.30	.72	2.27	2.00
2/ 3/75	6.1	-15.0	-4.5	-12.2	100.	25.	63.	4.3	2.4	1.9	120.4	0.00	.51	2.91	.49	1.82	2.00
2/10/75	6.1	-15.0	-4.5	-12.2	100.	25.	63.	4.3	2.4	1.9	120.4	0.00	.51	2.91	.49	1.82	2.00
2/17/75	11.7	-12.2	-.2	-7.3	100.	25.	63.	4.3	2.4	1.9	120.4	0.00	.51	2.91	.49	1.82	2.00
2/24/75	12.2	-15.6	-1.7	-8.6	100.	22.	61.	5.4	3.6	3.2	199.9	0.00	.72	4.09	.72	2.77	2.00

TABLE 77. CLIMATOLOGICAL DATA FOR RUDDLE LOVELOCK NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	EO	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00,CASE A																	
1/ 3/76	12.0	-13.7	-.9	0.0	90.	30.	60.	5.8	3.5	1.4	90.1	0.00	.24	2.55	1.02	.76	2.00
1/10/76	12.4	-7.0	2.7	0.0	89.	32.	61.	7.4	4.5	1.3	86.9	0.00	.67	3.25	.43	.76	2.00
1/17/76	14.0	-10.7	1.7	0.0	90.	36.	63.	6.9	4.3	1.9	125.5	0.00	.80	3.71	.46	.76	2.00
1/24/76	16.0	-10.6	2.7	0.0	90.	33.	62.	7.0	4.2	1.3	122.5	0.00	.80	3.74	.43	.76	2.00
1/31/76	16.3	-13.5	1.4	0.0	91.	28.	59.	6.8	4.2	1.3	307.3	0.00	.72	3.96	.81	.76	2.00
2/ 7/76	11.0	-9.0	1.0	0.0	88.	34.	62.	6.6	4.1	2.3	149.6	0.00	.70	4.95	1.64	.76	2.00
2/14/76	16.0	-8.5	3.8	0.0	88.	16.	52.	8.0	4.2	1.4	222.0	0.00	.46	4.35	1.75	.76	2.00
2/21/76	20.5	-6.0	7.3	0.0	90.	13.	52.	8.0	4.0	2.3	185.0	0.00	.69	5.34	1.85	2.03	2.00
2/28/76	17.5	-10.5	3.5	0.0	90.	24.	57.	7.1	4.5	2.2	339.5	0.00	.50	4.86	.06	3.05	2.00
3/ 6/76	18.5	-13.8	2.6	0.0	89.	20.	54.	7.1	4.5	0.0	0.0	0.00	.95	7.16	.53	3.81	2.00
3/13/76	23.5	-11.0	6.3	0.0	89.	14.	51.	7.5	4.6	3.5	228.5	0.00	.49	5.87	.80	3.56	2.00
3/20/76	22.5	-10.3	5.7	0.0	89.	13.	51.	7.5	4.6	3.6	230.1	0.00	.54	5.09	.55	3.63	2.00
3/27/76	24.5	-7.0	9.8	0.0	88.	13.	51.	7.5	4.5	3.9	255.8	0.00	.71	8.19	.96	3.32	2.00
4/ 3/76	24.5	-5.5	9.5	0.0	88.	10.	49.	7.5	4.3	4.1	267.1	0.00	.61	7.45	.61	3.46	2.00
4/10/76	20.0	-6.0	7.0	0.0	89.	17.	53.	7.5	4.5	4.1	267.1	0.00	.31	7.67	.64	3.63	2.00
4/17/76	22.5	-6.5	7.9	0.0	89.	9.	49.	7.5	4.5	4.2	267.6	0.00	.51	8.81	.92	3.56	2.00
4/24/76	24.0	-6.5	8.8	0.0	87.	22.	55.	7.5	4.5	3.8	244.6	0.00	.68	9.49	.04	3.35	2.00
5/ 1/76	20.0	2.0	15.5	0.0	88.	23.	56.	7.5	4.5	4.4	286.4	0.00	.69	9.33	.97	3.63	2.00
5/ 8/76	31.0	4.0	17.5	0.0	88.	18.	53.	7.5	4.5	4.0	194.7	0.00	.92	10.18	.05	3.56	2.00
5/15/76	29.0	1.0	15.0	0.0	88.	19.	54.	7.5	4.5	3.6	231.6	0.00	.92	10.78	.39	3.56	2.00
5/22/76	27.0	3.0	14.5	0.0	87.	21.	54.	7.5	4.5	3.6	165.7	0.00	.91	10.88	.51	3.56	2.00
5/29/76	25.0	4.0	14.5	0.0	89.	25.	57.	7.5	4.5	3.4	217.2	0.00	.83	11.66	.32	3.56	2.00
6/ 5/76	26.0	2.5	14.3	0.0	87.	19.	53.	7.5	4.5	3.2	167.3	0.00	.69	8.89	.64	3.56	2.00
6/12/76	32.0	5.0	18.5	0.0	88.	21.	55.	7.5	4.5	3.2	204.3	0.00	.84	12.00	.46	3.56	2.00
6/19/76	33.5	4.0	18.8	0.0	87.	21.	54.	7.5	4.5	3.2	180.2	0.00	.85	10.23	.37	3.56	2.00
6/26/76	32.0	6.0	19.0	0.0	86.	32.	59.	7.5	4.5	3.1	231.1	0.00	.92	11.82	.31	3.56	2.00
7/ 3/76	34.0	9.0	21.5	0.0	83.	24.	54.	7.5	4.5	3.1	115.8	0.00	.90	11.10	.01	3.56	2.00
7/10/76	32.0	8.0	20.0	0.0	83.	19.	51.	7.5	4.5	2.3	149.6	0.00	.83	10.66	.75	3.56	2.00
7/17/76	34.0	12.0	23.0	0.0	88.	20.	54.	7.5	4.5	2.8	114.2	0.00	.81	10.13	.30	3.56	2.00
7/24/76	34.0	6.0	18.3	0.0	83.	15.	49.	7.5	4.5	2.5	56.5	0.00	.91	9.13	.35	3.56	2.00
7/31/76	30.5	6.0	18.5	0.0	88.	15.	49.	7.5	4.5	2.5	160.2	0.00	.68	9.55	.12	3.56	2.00
8/ 7/76	32.0	4.0	18.0	0.0	88.	15.	49.	7.5	4.5	2.5	159.3	0.00	.91	10.56	.24	3.56	2.00
8/14/76	28.0	3.0	15.5	0.0	88.	22.	53.	7.5	4.5	2.5	168.9	0.00	.57	6.22	.19	3.56	2.00
8/21/76	36.0	8.0	22.0	0.0	88.	13.	51.	7.5	4.5	2.5	160.9	0.00	.90	8.93	.24	3.56	2.00
8/28/76	34.0	6.0	20.0	0.0	88.	13.	51.	7.5	4.5	2.5	228.5	0.00	.99	9.11	.95	3.56	2.00
9/ 4/76	33.0	8.0	20.5	0.0	88.	20.	54.	7.5	4.5	2.5	178.6	0.00	.84	7.77	.48	3.56	2.00
9/11/76	28.5	6.0	17.3	0.0	88.	18.	53.	7.5	4.5	2.3	146.4	0.00	.52	6.49	.24	3.56	2.00
9/18/76	25.5	4.0	15.0	0.0	88.	20.	54.	7.5	4.5	2.3	111.0	0.00	.80	6.66	.41	3.56	2.00
9/25/76	27.0	3.0	15.0	0.0	88.	20.	54.	7.5	4.5	2.1	107.8	0.00	.77	6.75	.78	3.56	2.00
10/ 2/76	24.0	3.0	13.5	0.0	88.	25.	56.	7.5	4.5	2.1	127.1	0.00	.84	6.32	.28	3.56	2.00
10/ 9/76	27.0	1.0	14.0	0.0	88.	25.	56.	7.5	4.5	2.1	86.9	0.00	.94	6.61	.17	3.56	2.00
10/16/76	24.0	-4.0	10.0	0.0	88.	25.	56.	7.5	4.5	1.9	135.2	0.00	.89	6.27	.96	3.56	2.00
10/23/76	22.0	-5.5	8.3	0.0	88.	25.	56.	7.5	4.5	1.9	123.9	0.00	.64	4.61	.24	3.56	2.00
10/30/76	22.0	-5.5	8.2	0.0	88.	25.	56.	7.5	4.5	1.8	51.5	0.00	.87	5.27	.30	3.56	2.00
11/ 6/76	18.3	-6.0	6.2	0.0	88.	25.	56.	7.5	4.5	1.4	93.3	0.00	.64	2.96	.11	3.56	2.00
11/13/76	18.0	-6.5	5.8	0.0	88.	25.	56.	7.5	4.5	1.4	93.3	0.00	.75	4.44	.11	3.56	2.00
11/20/76	18.0	-14.0	-1.0	0.0	88.	25.	56.	7.5	4.5	1.6	101.4	0.00	.83	3.16	.05	3.56	2.00
11/27/76	12.0	-13.0	-1.5	0.0	88.	25.	56.	7.5	4.5	1.9	123.9	0.00	.96	3.77	.26	3.56	2.00
12/ 4/76	11.0	-14.0	-1.5	0.0	88.	25.	56.	7.5	4.5	1.0	64.4	0.00	.76	3.35	.24	3.56	2.00
12/11/76	11.0	-14.0	-1.5	0.0	88.	25.	56.	7.5	4.5	1.0	64.4	0.00	.95	3.33	.05	3.56	2.00
12/18/76	9.5	-17.5	-4.0	0.0	88.	25.	56.	7.5	4.5	1.0	64.4	0.00	.88	3.32	.24	3.56	2.00
12/25/76	10.5	-15.0	-2.3	0.0	87.	19.	53.	5.2	2.8	.9	59.5	0.00	.76	2.69	.24	.76	2.00

TABLE 78. CLIMATOLOGICAL DATA FOR CARPENTER LOVELOCK NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00,CASE A																	
1/ 3/76	12.4	-15.2	-1.4	0.0	100.	36.	68.	5.5	3.8	1.2	80.5	0.00	.24	2.55	1.03	.76	2.00
1/10/76	12.8	-7.0	2.9	0.0	100.	34.	67.	7.5	5.1	1.0	64.4	0.00	.67	3.25	.47	.76	2.00
1/17/76	13.5	-15.0	-.8	0.0	100.	40.	70.	5.8	4.1	1.4	93.3	0.00	.80	3.71	.51	.76	2.00
1/24/76	16.0	-13.5	1.3	0.0	100.	26.	63.	6.7	4.2	1.2	78.8	0.00	.80	3.74	.48	.76	2.00
1/31/76	17.0	-10.5	3.3	0.0	100.	25.	63.	7.7	4.8	4.7	302.5	0.00	.72	3.96	.85	.76	2.00
2/ 7/76	14.0	-9.0	2.5	0.0	100.	39.	70.	7.3	5.1	2.0	128.7	0.00	.70	4.95	1.68	.76	2.00
2/14/76	15.5	-11.5	2.0	0.0	99.	20.	60.	7.1	4.2	3.6	234.9	0.00	.46	4.35	1.79	2.03	2.00
2/21/76	19.5	-14.0	2.8	0.0	95.	17.	56.	7.5	4.2	2.6	170.6	0.00	.69	5.34	1.91	3.09	2.00
2/28/76	18.0	-15.0	1.5	0.0	100.	35.	68.	6.8	4.6	5.4	352.4	0.00	.50	4.86	2.11	3.81	2.00
3/ 6/76	17.7	-15.0	1.4	0.0	96.	26.	61.	6.7	4.1	0.0	0.0	0.00	.96	7.16	2.62	3.81	0.00
3/13/76	23.5	-14.5	4.5	0.0	97.	20.	59.	8.4	4.9	2.1	138.4	0.00	.49	5.87	2.84	3.56	2.00
3/20/76	22.0	-11.5	5.3	0.0	87.	16.	52.	8.9	4.6	3.7	241.4	0.00	.54	7.09	3.59	4.83	2.00
3/27/76	22.0	-10.0	6.0	0.0	100.	20.	60.	9.4	5.6	4.0	260.7	0.00	.71	8.19	4.03	4.32	2.00
4/ 3/76	23.5	-9.0	7.3	0.0	99.	15.	57.	10.2	5.8	3.8	247.8	0.00	.61	7.45	3.71	5.84	2.00
4/10/76	23.0	-8.0	7.5	0.0	100.	22.	61.	10.4	6.3	4.3	281.6	0.00	.31	7.67	4.67	4.06	2.00
4/17/76	23.5	-11.0	6.3	0.0	99.	16.	58.	9.5	5.5	3.1	202.7	0.00	.51	8.81	4.99	4.83	2.00
4/24/76	24.0	-10.0	7.0	0.0	100.	25.	63.	10.0	5.3	3.5	223.7	0.00	.68	9.49	5.10	5.33	2.00
5/ 1/76	27.5	.5	14.0	0.0	99.	24.	62.	16.0	9.8	4.0	260.7	0.00	.69	9.33	5.02	6.10	2.00
5/ 8/76	31.0	0.0	15.5	0.0	100.	23.	62.	17.6	10.8	2.7	177.0	0.00	.90	10.18	5.17	6.60	2.00
5/15/76	29.0	-1.0	14.0	0.0	95.	26.	61.	16.0	9.7	3.1	202.7	0.00	.92	10.78	5.52	6.60	2.00
5/22/76	27.0	0.0	13.5	0.0	100.	20.	60.	15.5	9.3	2.5	159.3	0.00	.91	10.88	5.61	5.59	2.00
5/29/76	26.0	1.0	13.5	0.0	90.	20.	55.	15.5	8.5	3.0	194.7	0.00	.83	11.66	6.33	6.10	2.00
6/ 5/76	27.5	0.0	13.8	0.0	89.	21.	55.	15.7	8.7	2.2	140.0	0.00	.69	8.89	4.61	4.32	2.00
6/12/76	20.0	0.0	10.0	0.0	99.	20.	60.	12.3	7.3	2.5	162.5	0.00	.84	12.00	6.57	5.08	2.00
6/19/76	31.0	1.5	16.3	0.0	100.	22.	61.	18.5	11.3	1.9	120.7	0.00	.85	10.23	5.34	4.32	2.00
6/26/76	35.0	1.5	18.3	0.0	100.	20.	60.	21.0	12.6	3.0	196.3	0.00	.92	11.82	6.40	8.64	2.00
7/ 3/76	34.0	3.0	18.5	0.0	100.	26.	63.	21.3	13.4	1.4	90.1	0.00	.90	11.10	5.97	7.62	2.00
7/10/76	36.5	6.0	21.3	0.0	100.	20.	60.	25.3	15.2	2.1	138.4	0.00	.89	10.66	5.71	7.87	2.00
7/17/76	33.0	7.0	20.0	0.0	89.	18.	54.	23.4	12.5	1.8	115.8	0.00	.81	10.13	5.34	5.84	2.00
7/24/76	35.5	11.0	23.3	0.0	98.	24.	61.	28.5	17.4	1.6	106.2	0.00	.91	9.13	4.63	5.84	2.00
7/31/76	30.0	4.5	17.3	0.0	100.	29.	65.	19.7	12.7	2.1	133.5	0.00	.68	9.55	5.31	4.57	2.00
8/ 7/76	32.5	2.0	17.3	0.0	97.	16.	57.	19.7	11.1	2.2	143.2	0.00	.91	10.56	5.39	5.84	2.00
8/14/76	33.0	1.0	17.0	0.0	100.	21.	61.	19.4	11.7	2.5	160.9	0.00	.57	6.22	3.02	3.81	2.00
8/21/76	34.0	1.0	17.5	0.0	99.	15.	57.	20.0	11.4	2.7	173.8	0.00	.90	8.93	4.21	9.65	2.00
8/28/76	35.0	3.0	19.0	0.0	99.	15.	57.	22.0	12.5	4.2	270.3	0.00	.99	9.11	4.17	5.59	2.00
9/ 4/76	34.0	5.5	19.8	0.0	98.	25.	62.	23.0	14.2	3.0	193.1	0.00	.84	7.77	3.63	5.84	2.00
9/11/76	26.0	3.0	14.5	0.0	100.	35.	68.	16.5	11.2	2.1	138.4	0.00	.52	6.49	3.37	2.03	2.00
9/18/76	27.0	1.0	14.0	0.0	100.	21.	61.	16.0	9.7	1.6	101.4	0.00	.88	6.66	2.53	3.30	2.00
9/25/76	28.0	1.5	14.8	0.0	100.	27.	64.	16.8	10.7	1.7	109.4	0.00	.77	6.75	2.92	3.55	2.00
10/ 2/76	25.5	0.0	12.8	0.0	100.	30.	65.	14.8	9.6	1.9	120.7	0.00	.84	6.32	2.41	2.54	2.00
10/ 9/76	26.0	-3.5	12.3	0.0	98.	21.	60.	14.3	8.5	1.5	96.5	0.00	.94	6.61	2.30	3.30	2.00
10/16/76	28.0	-8.0	10.0	0.0	99.	18.	59.	12.3	7.2	1.7	111.0	0.00	.89	6.27	2.13	3.30	2.00
10/23/76	21.0	-9.5	5.8	0.0	100.	29.	65.	9.2	5.9	1.9	123.9	0.00	.64	4.61	1.55	2.54	2.00
10/30/76	22.0	-7.0	7.5	0.0	100.	20.	60.	10.4	6.2	.8	49.9	0.00	.87	5.27	1.43	2.29	2.00
11/ 6/76	25.5	-6.0	9.8	0.0	100.	28.	64.	12.1	7.7	1.3	82.1	0.00	.64	2.96	.33	2.03	2.00
11/13/76	18.5	-8.5	5.0	0.0	100.	38.	69.	8.7	6.0	1.5	96.5	0.00	.75	4.44	1.18	1.78	2.00
11/20/76	21.0	-9.0	6.0	0.0	100.	32.	66.	9.4	6.2	1.3	82.1	0.00	.83	3.16	-.00	1.78	2.00
11/27/76	10.5	-17.0	-3.3	0.0	93.	28.	61.	4.8	2.9	1.4	93.3	0.00	.96	3.77	.12	.76	2.00
12/ 4/76	12.0	-15.0	-1.5	0.0	100.	25.	63.	5.5	3.4	1.6	103.0	0.00	.76	3.35	.30	.76	2.00
12/11/76	12.0	-19.0	-3.0	0.0	99.	32.	66.	4.9	3.2	.7	48.3	0.00	.95	3.33	-.16	.76	2.00
12/18/76	10.0	-19.0	-4.5	0.0	97.	33.	65.	4.4	2.9	.8	49.9	0.00	.88	3.32	-.02	.76	2.00
12/25/76	10.5	-18.0	-3.8	0.0	100.	25.	63.	4.6	2.9	.7	48.3	0.00	.76	2.69	-.17	.76	2.00

TABLE 75. CLIMATOLOGICAL DATA FOR NEWLANDS FIELD LAB FALLON 1976

VALUES OF FETCH 220.00,CASE A

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
1/ 2/76	11.7	-12.8	-.6	-7.6	100.	25.	63.	5.9	3.5	1.1	90.7	0.00	.30	2.48	.81	.76	1.10
1/ 8/76	10.6	-12.2	-.8	-5.7	100.	31.	66.	5.8	4.0	.7	56.8	0.00	.76	4.01	.84	.51	1.10
1/16/76	18.9	-10.6	4.2	-6.4	100.	17.	59.	8.2	3.8	.6	46.3	0.00	.42	3.02	.84	.51	1.10
1/22/76	11.1	-10.0	.6	-7.1	100.	27.	64.	6.4	3.6	.6	49.2	0.00	.57	3.80	1.08	.51	1.10
1/30/76	12.8	-6.7	3.1	-8.3	100.	22.	56.	7.6	3.3	.5	122.3	0.00	.46	3.62	1.17	.51	1.10
2/ 6/76	8.9	-9.4	-.3	-8.3	100.	29.	64.	6.0	3.3	1.4	114.2	0.00	.38	3.50	1.36	.51	1.10
2/13/76	16.1	-2.2	6.9	-6.8	71.	20.	46.	7.0	3.7	2.5	204.8	0.00	.39	3.75	1.41	.51	1.10
2/20/76	19.4	-10.0	4.7	-9.8	100.	13.	56.	8.6	2.9	2.2	183.1	0.00	.57	3.05	1.70	.51	1.10
2/27/76	18.3	-12.8	2.8	-9.3	100.	14.	57.	7.5	3.0	3.8	299.1	0.00	.46	4.84	1.93	.51	1.10
3/ 5/76	16.7	-12.8	1.9	-10.9	100.	14.	57.	7.0	2.7	1.2	97.8	0.00	.81	6.67	2.60	.51	1.10
3/12/76	23.3	-11.1	6.1	-8.9	100.	11.	55.	9.4	3.1	1.9	152.3	0.00	.89	7.70	2.91	.51	1.10
3/19/76	21.1	-11.1	5.0	-10.0	100.	11.	56.	8.7	2.9	3.3	260.3	0.00	.56	6.25	2.76	.51	1.10
3/26/76	22.2	-8.9	6.7	-9.8	93.	11.	52.	9.8	2.9	2.9	212.4	0.00	.81	8.12	3.41	.51	1.10
4/ 2/76	22.8	-8.9	6.9	-7.3	100.	13.	56.	10.0	3.5	2.7	192.6	0.00	.66	7.54	3.46	.51	1.10
4/ 9/76	20.6	-7.8	6.4	-7.3	100.	15.	57.	9.6	3.6	2.8	203.9	0.00	.52	6.98	3.45	.51	1.10
4/16/76	23.9	-7.8	8.1	-6.7	100.	13.	56.	10.8	3.7	2.4	169.8	0.00	.85	9.66	4.49	.51	1.10
4/23/76	25.3	-7.2	9.1	-7.2	100.	12.	56.	10.8	3.6	2.6	189.9	0.00	.94	10.64	4.95	.51	1.10
4/30/76	27.8	1.1	14.4	-3.0	74.	13.	44.	10.5	3.9	2.1	151.2	0.00	.92	10.83	5.05	.51	1.10
5/ 7/76	27.8	1.1	14.4	-1.9	80.	14.	47.	10.5	3.3	2.1	144.0	0.00	.74	9.75	4.82	.51	1.10
5/14/76	31.7	1.7	16.7	-3.2	70.	10.	40.	10.0	3.9	1.9	130.5	0.00	1.00	12.52	5.97	.51	1.10
5/21/76	28.3	3.3	15.8	-1.2	69.	14.	42.	10.8	4.4	1.8	118.4	0.00	.96	12.07	5.85	.51	1.10
5/28/76	28.3	.6	14.4	-2.4	80.	13.	47.	10.5	5.1	3.1	200.8	0.00	1.00	12.87	6.37	.51	1.10
6/ 4/76	27.8	.0	13.9	-2.7	82.	13.	44.	9.9	5.0	2.5	162.0	0.00	.82	11.15	5.63	.51	1.10
6/11/76	23.4	5.0	15.0	10.5	100.	16.	53.	12.7	6.5	2.2	161.1	0.00	1.00	13.34	6.86	.51	1.10
6/18/76	32.2	5.6	18.9	1.7	75.	14.	45.	12.6	6.9	1.8	121.7	0.00	.89	11.97	6.04	.51	1.10
6/25/76	32.8	1.0	16.9	-1.2	91.	12.	51.	12.6	6.0	1.8	126.7	0.00	.95	12.38	6.15	.51	1.10
7/ 2/76	34.4	2.8	18.6	1.8	93.	13.	53.	12.7	6.0	1.7	116.7	0.00	.95	12.32	6.13	.51	1.10
7/ 9/76	36.7	7.8	22.2	4.2	78.	13.	46.	12.7	8.3	1.7	116.7	0.00	.96	12.26	6.07	.51	1.10
7/16/76	34.4	7.8	21.1	4.3	79.	15.	47.	12.7	8.3	1.6	112.6	0.00	.53	8.55	3.58	.51	1.10
7/23/76	35.0	12.8	23.9	10.4	86.	23.	54.	12.7	7.7	1.6	95.9	0.00	.84	10.89	5.73	.51	1.10
7/30/76	32.8	6.1	19.4	10.4	100.	25.	63.	12.6	8.4	1.8	107.8	0.00	.64	9.05	4.98	.51	1.10
8/ 6/76	32.8	5.1	21.0	4.0	90.	12.	51.	12.6	8.1	1.8	107.8	0.00	.86	10.64	5.13	.51	1.10
8/13/76	32.2	4.4	18.3	4.5	100.	17.	58.	11.1	8.4	1.5	87.9	0.00	.58	8.22	4.30	.51	1.10
8/20/76	33.3	3.9	18.6	4.7	100.	16.	58.	11.1	8.5	1.5	87.9	0.00	.81	9.66	5.98	.51	1.10
8/27/76	35.6	3.4	20.0	6.9	100.	17.	58.	10.9	10.0	1.0	66.3	0.00	1.00	13.19	7.93	.51	1.10
9/ 5/76	33.3	2.8	18.1	8.4	100.	21.	60.	10.9	10.9	1.5	100.7	0.00	.61	7.45	4.76	.51	1.10
9/12/76	33.3	3.9	18.6	7.1	100.	22.	61.	11.1	11.1	1.3	73.7	0.00	.37	5.58	3.37	.51	1.10
9/19/76	27.8	3.3	15.8	7.9	100.	27.	63.	11.1	10.1	1.7	63.1	0.00	.66	5.09	3.07	.51	1.10
9/26/76	26.9	3.3	16.1	7.9	100.	27.	63.	10.7	10.7	1.7	95.6	0.00	.64	6.58	3.80	.51	1.10
10/ 3/76	26.7	.6	13.6	5.3	100.	19.	60.	9.3	7.2	1.0	52.5	0.00	.67	6.33	3.30	.51	1.10
10/10/76	27.8	-.6	13.6	2.3	100.	17.	60.	7.2	5.2	1.2	64.7	0.00	.76	6.33	3.44	.51	1.10
10/17/76	23.9	-5.0	9.2	-2.0	100.	17.	59.	5.2	5.2	1.1	58.9	0.00	.78	6.11	3.81	.51	1.10
10/24/76	21.7	-7.2	7.2	-4.1	100.	20.	60.	5.2	5.5	1.5	80.8	0.00	.64	5.99	3.47	.51	1.10
10/31/76	22.2	-5.6	8.3	-3.1	100.	17.	58.	5.5	4.9	.6	39.7	0.00	.63	6.04	3.27	.51	1.10
11/ 7/76	21.1	-5.6	7.8	-3.0	100.	20.	60.	5.8	4.8	.7	43.5	0.00	.54	5.22	2.94	.51	1.10
11/14/76	19.4	-6.7	6.4	-4.5	100.	20.	60.	5.5	4.5	1.0	62.1	0.00	.39	4.24	2.17	.51	1.10
11/21/76	17.8	-16.1	.8	-11.3	100.	22.	61.	4.5	4.5	1.3	83.7	0.00	.45	4.33	2.17	.51	1.10
11/28/76	10.6	-15.6	-2.5	-11.8	100.	20.	60.	3.5	3.3	.5	32.7	0.00	.52	5.09	2.78	.51	1.10
12/ 5/76	14.4	-13.3	-2.6	-9.3	100.	24.	60.	4.1	3.8	.9	56.3	0.00	.36	3.61	1.79	.51	1.10
12/12/76	10.6	-15.6	-2.8	-9.6	100.	24.	62.	3.8	3.0	.4	26.7	0.00	.57	5.18	2.83	.51	1.10
12/19/76	10.6	-17.8	-3.6	-12.3	100.	19.	59.	3.4	2.4	.3	22.5	0.00	.47	4.87	2.62	.51	1.10
12/26/76	10.0	-16.1	-3.1	-11.9	100.	20.	60.	4.9	2.5	.4	26.4	0.00	.52	3.09	.69	1.02	1.10

TABLE 76. CLIMATOLOGICAL DATA FOR NEWLANDS FIELD LAB FALLON 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00, CASE A																	
1/ 2/77	9.4	-17.2	-3.9	-8.0	100.	28.	64.	4.6	3.4	2.4	152.9	0.00	.28	2.42	.86	.76	2.00
1/ 9/77	7.8	-12.2	-2.2	-8.6	100.	30.	65.	5.2	3.2	.4	28.3	0.00	.38	2.82	.86	.76	2.00
1/16/77	10.0	-13.3	-1.9	-6.1	100.	32.	66.	5.3	3.9	.5	34.1	0.00	.40	2.97	.96	.76	2.00
1/23/77	10.0	-12.8	-1.4	-6.2	100.	34.	67.	5.5	4.2	.6	39.1	0.00	.51	3.59	1.15	1.27	2.00
1/30/77	11.7	-12.8	-.6	-7.3	100.	25.	62.	5.9	3.4	.8	54.5	0.00	.66	4.40	1.31	1.27	2.00
2/ 6/77	15.6	-9.4	3.1	-5.3	100.	23.	62.	7.6	4.1	1.3	82.7	0.00	.70	4.77	1.46	1.27	2.00
2/13/77	21.1	-7.8	6.7	-6.8	100.	15.	57.	9.8	3.7	.8	52.3	0.00	.84	5.67	1.57	3.56	2.00
2/20/77	20.0	-12.8	3.6	-8.1	100.	14.	57.	7.9	3.3	2.3	146.6	0.00	.54	4.71	1.75	1.78	2.00
2/27/77	17.2	-10.6	3.3	-9.7	100.	15.	57.	7.8	2.9	2.9	189.5	0.00	.82	6.42	2.22	3.56	2.00
3/ 6/77	20.6	-11.1	4.7	-10.7	100.	11.	56.	8.6	2.7	3.1	202.6	0.00	.83	7.04	2.57	3.56	2.00
3/13/77	16.1	-13.3	1.4	-10.4	100.	15.	58.	6.8	2.8	2.7	176.8	0.00	.68	6.60	2.80	5.84	2.00
3/20/77	23.3	-10.0	6.7	-9.4	100.	11.	55.	9.8	2.8	2.7	177.0	0.00	.83	7.89	3.18	5.84	2.00
3/27/77	20.6	-12.8	3.9	-11.2	100.	11.	55.	8.1	2.6	3.9	249.6	0.00	.86	8.51	3.62	6.60	2.00
4/ 3/77	27.8	-7.8	10.0	-5.8	100.	11.	55.	12.3	.0	5.9	380.0	0.00	.95	9.52	4.03	5.84	2.00
4/10/77	26.1	-3.3	11.4	-7.0	76.	11.	43.	13.5	3.6	1.8	118.6	0.00	.79	8.86	3.93	8.13	2.00
4/17/77	28.3	-5.0	11.7	-9.9	68.	7.	38.	13.7	2.9	2.5	165.1	0.00	.95	10.42	4.49	8.38	2.00
4/24/77	30.0	.6	15.3	-3.7	73.	11.	42.	17.4	4.7	2.1	136.0	0.00	.82	9.83	4.52	6.86	2.00
5/ 1/77	21.1	-3.9	8.6	-2.4	100.	20.	60.	11.2	5.1	2.7	173.3	0.00	.78	9.81	4.93	6.86	2.00
5/ 8/77	18.9	1.7	10.3	1.1	96.	30.	63.	12.5	6.6	2.2	139.3	0.00	.40	7.15	4.01	3.05	2.00
5/15/77	20.6	-2.2	9.2	-2.2	100.	21.	61.	11.6	5.5	2.8	183.3	0.00	.58	8.82	4.72	5.59	2.00
5/22/77	23.9	.6	12.3	.8	100.	22.	61.	14.2	6.5	1.9	123.1	0.00	.73	10.14	5.31	6.35	2.00
5/27/77	35.6	1.1	18.3	.2	94.	11.	52.	21.1	6.2	2.1	134.4	0.00	.97	12.27	5.97	8.38	2.00
6/ 3/77	35.0	5.1	20.6	6.5	100.	17.	59.	24.2	9.7	1.4	88.2	0.00	.71	10.23	5.44	8.38	2.00
6/10/77	29.4	7.2	18.3	6.6	93.	23.	58.	21.1	9.5	1.4	88.5	0.00	.75	10.69	5.73	6.60	2.00
6/17/77	32.2	7.2	19.7	8.3	100.	23.	61.	23.0	11.0	1.5	100.2	0.00	.74	10.73	5.85	8.38	2.00
6/24/77	40.6	13.3	26.9	8.4	72.	15.	43.	35.6	11.0	1.5	98.8	0.00	.86	11.61	5.97	10.41	2.00
7/ 1/77	33.0	5.0	20.0	6.4	100.	17.	59.	23.4	9.6	1.9	126.3	0.00	.83	11.28	5.92	8.64	2.00
7/ 8/77	37.8	6.7	22.2	5.3	91.	14.	52.	26.8	8.9	1.2	76.7	0.00	.93	12.07	6.07	9.40	2.00
7/15/77	41.1	9.4	25.3	7.3	86.	13.	50.	32.2	10.2	1.3	85.3	0.00	.88	11.55	5.83	10.41	2.00
7/22/77	34.4	8.3	21.3	5.2	78.	16.	47.	25.9	8.9	1.1	73.9	0.00	.87	11.17	5.60	8.38	2.00
7/29/77	38.3	7.8	23.3	5.1	83.	13.	48.	28.7	8.8	1.2	77.2	0.00	.83	10.60	5.22	9.65	2.00
8/ 5/77	35.0	7.8	21.4	5.4	85.	16.	50.	25.5	9.0	.9	59.9	0.00	.78	10.03	5.01	7.37	2.00
8/12/77	35.6	11.1	23.3	7.1	79.	18.	49.	28.7	10.5	1.1	70.0	0.00	.60	8.42	4.36	6.86	2.00
8/19/77	35.0	7.8	21.4	9.4	100.	21.	61.	25.5	11.8	1.1	72.1	0.00	.59	8.04	4.25	7.37	2.00
8/26/77	29.4	6.8	18.1	3.9	100.	20.	60.	18.3	8.1	1.4	93.2	0.00	.78	9.09	4.40	7.37	2.00
9/ 2/77	32.2	7.8	20.0	5.7	88.	19.	54.	23.4	9.3	.5	30.1	0.00	.74	8.48	4.03	6.10	2.00
9/ 4/77	35.0	6.1	20.6	3.7	84.	14.	49.	24.2	8.0	.8	54.1	0.00	.76	8.48	3.86	7.37	2.00
9/11/77	36.1	-1.7	17.2	1.2	100.	11.	56.	19.7	6.7	1.3	87.0	0.00	.55	6.81	3.18	6.10	2.00
9/18/77	26.1	-3.3	11.4	-1.1	100.	18.	58.	13.5	5.6	1.7	111.3	0.00	.65	7.07	3.18	6.10	2.00
9/25/77	27.2	-2.8	12.2	-1.1	100.	14.	57.	13.7	6.6	1.4	91.7	0.00	.57	6.24	2.82	4.06	2.00
10/ 2/77	28.3	-3.3	11.7	-3.0	100.	14.	57.	13.7	4.9	1.2	75.0	0.00	.68	5.94	2.45	4.83	2.00
10/ 9/77	27.2	-2.8	12.2	-2.6	100.	14.	57.	14.2	5.1	.6	38.6	0.00	.56	5.46	2.16	3.56	2.00
10/16/77	26.7	-3.9	11.9	-2.9	100.	14.	57.	14.0	5.3	.7	45.9	0.00	.47	4.68	1.85	3.81	2.00
10/23/77	26.7	-1.7	12.5	-.7	100.	17.	58.	14.5	5.8	.8	51.3	0.00	.31	3.64	1.56	3.30	2.00
10/30/77	22.8	-6.1	8.3	-4.7	100.	16.	59.	11.0	4.4	1.7	110.9	0.00	.38	3.72	1.40	4.06	2.00
11/ 6/77	20.0	-12.8	3.6	-8.7	100.	14.	57.	7.9	3.2	1.1	74.0	0.00	.32	3.23	1.24	2.29	2.00
11/13/77	19.4	-11.7	3.9	-8.7	100.	14.	57.	8.1	3.2	1.1	68.9	0.00	.36	3.15	1.05	2.54	2.00
11/20/77	21.1	-16.7	2.2	-5.3	100.	16.	58.	7.2	4.1	2.2	139.8	0.00	.23	2.52	1.00	2.29	2.00
11/27/77	21.1	-7.8	6.7	-5.3	100.	17.	58.	9.8	4.1	1.0	61.8	0.00	.28	2.59	.85	2.03	2.00
12/ 4/77	20.0	-11.7	4.2	-6.2	100.	16.	58.	8.2	3.9	1.2	80.3	0.00	.24	2.32	.80	2.29	2.00
12/11/77	20.0	-10.0	5.0	-5.8	100.	17.	59.	8.7	4.0	2.5	164.4	0.00	.17	2.02	.74	2.54	2.00
12/18/77	12.8	-12.8	0.0	-6.8	100.	25.	62.	6.1	3.7	2.1	137.7	0.00	.39	2.63	.68	.76	2.00
12/25/77	10.6	-5.6	2.5	-3.3	100.	38.	69.	7.3	4.8	.8	53.1	0.00	.33	2.52	.77	.51	2.00

TABLE 79. CLIMATOLOGICAL DATA FOR RUDDLE LOVELOCK NEVADA 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 200.00, CASE A																	
1/ 1/77	6.0	-18.0	-6.0	0.0	88.	41.	65.	3.9	2.5	2.8	183.4	0.00	.50	2.84	.62	1.02	2.00
1/ 8/77	7.0	-18.5	-5.8	0.0	90.	41.	66.	4.0	2.6	1.8	114.2	0.00	.63	3.21	.58	1.27	2.00
1/15/77	10.0	-9.0	.5	0.0	87.	37.	62.	6.3	3.9	1.5	99.8	0.00	.65	4.01	1.07	1.27	2.00
1/22/77	8.7	-8.0	.4	0.0	87.	39.	63.	6.3	4.0	2.1	135.2	0.00	.82	3.33	.13	1.02	2.00
1/29/77	13.0	-9.0	2.0	0.0	87.	24.	56.	7.1	3.9	1.5	94.9	0.00	.91	4.44	.66	.25	2.00
2/ 5/77	16.5	-7.0	4.8	0.0	87.	18.	53.	8.5	4.5	1.6	103.0	0.00	.77	4.66	1.16	.25	2.00
2/12/77	20.0	-4.0	8.0	0.0	84.	19.	52.	10.7	5.5	.9	57.9	0.00	.85	5.05	1.23	2.29	2.00
2/19/77	20.0	-4.0	8.0	0.0	87.	16.	52.	10.7	5.5	2.4	157.7	0.00	.37	3.84	1.60	2.29	2.00
2/26/77	16.5	-8.0	3.8	0.0	99.	19.	59.	8.0	4.7	3.0	196.3	0.00	.45	5.46	2.64	2.54	2.00
3/ 5/77	19.0	-9.0	5.0	0.0	99.	10.	55.	8.7	4.8	3.3	210.8	0.00	.64	5.68	2.28	3.81	2.00
3/12/77	16.5	-13.0	1.8	0.0	100.	17.	59.	6.9	4.1	3.2	209.2	0.00	.59	7.26	3.63	4.06	2.00
3/19/77	22.0	-6.0	8.0	0.0	98.	17.	58.	10.7	6.2	3.2	207.6	0.00	.77	7.46	3.31	5.08	2.00
3/26/77	18.5	-5.0	6.8	0.0	100.	14.	57.	9.9	5.6	4.2	270.3	0.00	.56	7.11	3.58	4.83	2.00
4/ 2/77	26.5	-7.0	9.8	0.0	99.	13.	56.	12.1	6.8	2.0	130.3	0.00	.80	8.65	4.12	6.35	2.00
4/ 9/77	22.0	-4.0	9.0	0.0	100.	18.	59.	11.5	6.8	3.4	220.4	0.00	.73	8.59	4.28	5.59	2.00
4/16/77	25.5	-5.0	10.3	0.0	79.	15.	47.	12.5	5.9	3.7	241.4	0.00	.80	9.50	4.66	7.62	2.00
4/23/77	29.0	-2.0	13.5	0.0	89.	16.	53.	15.5	8.1	2.3	151.2	0.00	.74	9.03	4.55	7.87	2.00
4/30/77	20.0	0.0	10.0	0.0	93.	20.	57.	12.3	6.9	2.9	188.3	0.00	.46	9.10	3.34	5.84	2.00
5/ 7/77	16.0	-1.0	7.5	0.0	97.	34.	66.	10.4	5.8	3.2	206.0	0.00	.30	6.32	3.71	3.81	2.00
5/14/77	18.0	0.0	9.0	0.0	96.	27.	62.	11.5	7.1	2.9	189.9	0.00	.64	9.20	4.99	4.83	2.00
5/21/77	22.5	3.0	12.8	0.0	93.	28.	61.	14.8	8.9	2.4	154.5	0.00	.47	8.21	4.70	4.32	2.00
5/28/77	30.0	3.0	16.5	0.0	84.	22.	53.	18.8	10.0	2.7	173.8	0.00	.93	10.51	5.23	7.87	2.00
6/ 4/77	33.0	11.0	22.0	0.0	93.	27.	60.	26.5	15.9	2.3	146.4	0.00	.61	5.88	2.79	5.08	2.00
6/11/77	28.0	10.0	19.0	0.0	90.	25.	58.	22.0	12.6	2.4	157.7	0.00	.82	9.38	4.80	6.35	2.00
6/18/77	30.0	8.0	19.0	0.0	94.	26.	60.	22.0	13.2	2.0	130.3	0.00	.82	9.33	4.80	5.33	2.00
6/25/77	32.0	13.0	22.5	0.0	91.	26.	59.	27.3	16.0	2.5	159.3	0.00	.89	10.00	5.24	4.83	2.00
7/ 2/77	30.5	7.0	18.8	0.0	94.	16.	55.	21.6	11.9	3.0	196.3	0.00	.89	10.80	5.63	6.60	2.00
7/ 9/77	32.0	10.5	21.5	0.0	76.	18.	47.	24.9	11.7	2.6	170.6	0.00	.99	10.85	5.32	7.87	2.00
7/16/77	32.5	10.5	21.5	0.0	91.	21.	56.	25.7	14.4	2.1	133.5	0.00	.91	10.88	5.76	7.37	2.00
7/23/77	31.5	8.0	19.8	0.0	89.	25.	57.	23.0	13.1	2.0	131.9	0.00	.93	9.55	4.67	6.86	2.00
7/30/77	34.5	13.0	23.8	0.0	94.	32.	63.	29.4	18.5	2.0	127.1	0.00	.83	8.28	4.23	5.33	2.00
8/ 6/77	35.0	9.0	22.0	0.0	91.	20.	56.	26.5	14.7	2.6	168.9	0.00	.87	9.27	4.65	6.96	2.00
8/13/77	35.0	11.0	23.0	0.0	93.	24.	59.	28.1	16.4	2.0	130.3	0.00	.74	8.14	4.20	3.30	2.00
8/20/77	32.0	10.0	21.0	0.0	94.	17.	56.	24.9	13.8	2.5	162.5	0.00	.61	10.64	6.27	6.60	2.00
8/27/77	30.0	5.0	17.5	0.0	90.	27.	59.	20.0	11.7	2.3	148.6	0.00	.94	8.40	3.74	5.84	2.00
9/ 3/77	31.0	7.0	19.0	0.0	84.	28.	56.	22.0	12.3	2.6	170.6	0.00	.99	7.96	3.29	5.84	2.00
9/10/77	29.0	3.0	16.0	0.0	96.	30.	63.	18.2	11.5	1.8	115.8	0.00	.77	7.33	3.38	4.57	2.00
9/17/77	21.0	-4.5	8.3	0.0	100.	29.	65.	10.9	7.0	1.3	85.3	0.00	.64	5.29	2.07	3.05	2.00
9/24/77	25.5	2.5	14.0	0.0	94.	30.	62.	16.0	9.9	3.4	220.4	0.00	.83	6.89	2.84	5.08	2.00
10/ 1/77	25.5	-1.0	12.3	0.0	95.	21.	58.	14.3	8.3	3.3	212.4	0.00	.80	6.58	2.38	5.08	2.00
10/ 8/77	25.0	0.0	12.5	0.0	79.	28.	54.	14.5	7.8	2.2	143.2	0.00	.96	5.80	1.56	4.57	2.00
10/15/77	27.0	1.0	14.0	0.0	90.	27.	59.	16.9	9.4	1.7	111.0	0.00	.91	6.43	2.25	3.56	2.00
10/22/77	23.5	.5	12.0	0.0	99.	37.	68.	14.0	9.5	2.2	141.6	0.00	.67	6.48	2.96	3.56	2.00
10/29/77	20.5	-3.0	8.8	0.0	86.	34.	60.	11.3	6.8	2.7	175.4	0.00	.63	5.27	2.05	2.79	2.00
11/ 5/77	15.5	-7.0	4.3	0.0	98.	63.	81.	8.3	5.2	1.9	123.9	0.00	.69	4.86	1.60	1.52	2.00
11/12/77	17.0	-9.5	3.8	0.0	98.	25.	62.	8.0	4.9	1.9	120.7	0.00	.76	3.86	.66	2.03	2.00
11/19/77	15.0	-16.0	-.5	0.0	99.	31.	65.	5.9	3.8	3.4	222.0	0.00	.30	4.28	2.17	1.52	2.00
11/26/77	17.0	-7.5	4.8	0.0	98.	25.	62.	8.6	5.3	1.7	109.4	0.00	.51	3.32	.89	1.52	2.00
12/ 3/77	17.5	-10.5	3.8	0.0	100.	17.	59.	8.0	4.7	2.0	131.9	0.00	.45	2.04	.08	2.03	2.00
12/10/77	14.0	-6.0	4.0	0.0	99.	28.	64.	8.1	5.2	2.5	164.1	0.00	.28	2.31	.74	1.02	2.00
12/17/77	9.0	-9.0	0.0	0.0	99.	31.	65.	6.1	4.0	2.7	173.8	0.00	.50	2.45	.29	.51	2.00
12/24/77	9.5	-6.5	1.5	0.0	98.	42.	70.	6.8	4.6	1.9	120.7	0.00	.41	2.67	.70	1.02	2.00
12/31/77	8.0	-6.0	1.0	0.0	100.	51.	76.	6.6	5.0	2.5	164.1	0.00	.42	2.23	.36	.25	2.00

TABLE 80. CLIMATOLOGICAL DATA FOR CARPENTER LOVELOCK NEVADA 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF																	
1/ 1/77																	
1/ 2/77																	
1/ 3/77																	
1/ 4/77																	
1/ 5/77																	
1/ 6/77																	
1/ 7/77																	
1/ 8/77																	
1/ 9/77																	
1/10/77																	
1/11/77																	
1/12/77																	
1/13/77																	
1/14/77																	
1/15/77																	
1/16/77																	
1/17/77																	
1/18/77																	
1/19/77																	
1/20/77																	
1/21/77																	
1/22/77																	
1/23/77																	
1/24/77																	
1/25/77																	
1/26/77																	
1/27/77																	
1/28/77																	
1/29/77																	
1/30/77																	
1/31/77																	

TABLE 81. CLIMATOLOGICAL DATA FOR ELKO NEVADA HALLECK STATION 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF	FETCH	20[	CO,	CASE	A												
1/ 5/76	9.0	-12.0	-1.5	5	0.0	84.	44.	64.	5.5	3.5	2.6	165.7	0.00	.50	2.96	.67	.79	2.
1/12/76	10.	-12.0	-1.0	0	0.0	88.	36.	62.	5.7	3.5	2.5	164.1	0.00	.73	3.91	.65	.79	2.
1/19/76	5.	-13.	-4.	0	0.0	85.	30.	58.	5.6	3.3	1.8	62.8	0.00	.70	3.84	.33	.79	2.
1/26/76	11.	-8.	1.	5	0.0	84.	33.	59.	5.8	3.5	1.5	94.1	0.00	.98	5.12	.99	.79	2.
2/ 2/76	12.	-11.	-2.	5	0.0	82.	26.	54.	5.3	3.2	3.8	244.4	0.00	.61	3.08	.17	.79	2.
2/ 9/76	8.	-12.	-2.	5	0.0	82.	33.	58.	5.8	3.5	1.6	101.4	0.00	.59	2.27	.46	.79	2.
2/16/76	7.	-12.	-2.	5	0.0	85.	46.	65.	5.5	3.3	1.4	89.5	0.00	.63	3.15	.97	.79	2.
2/23/76	14.	-10.	2.	5	0.0	86.	36.	61.	5.7	3.4	3.3	226.9	0.00	.86	4.65	.49	.79	2.
3/ 1/76	6.	-11.	-2.	5	0.0	86.	28.	57.	5.4	3.3	2.2	199.5	0.00	.64	3.23	.41	.79	2.
3/ 8/76	13.	-11.	1.	5	0.0	85.	18.	52.	4.9	3.0	3.8	177.0	0.00	.89	4.33	.99	.79	2.
3/15/76	19.	-11.	4.	5	0.0	86.	17.	52.	4.9	3.0	3.8	244.6	0.00	.84	4.38	.99	.79	2.
3/22/76	18.	-11.	3.	5	0.0	86.	18.	52.	4.9	3.0	.5	30.0	0.00	.83	4.38	.70	.79	2.
3/29/76	18.	-13.	2.	5	0.0	85.	13.	49.	4.6	2.8	2.7	172.2	0.00	.77	3.99	.87	.79	2.
4/ 5/76	15.	-11.	2.	5	0.0	87.	15.	51.	4.8	2.9	4.3	276.7	0.00	.54	2.80	.45	.79	2.
4/12/76	12.	-8.	2.	5	0.0	86.	11.	49.	4.6	2.8	3.8	247.8	0.00	.87	4.86	.83	.79	2.
4/19/76	20.	-7.	6.	5	0.0	86.	15.	51.	4.8	2.9	3.0	199.9	0.00	.79	4.89	.38	.79	2.
4/26/76	22.	-13.	4.	5	0.0	83.	15.	50.	4.7	2.8	3.5	221.7	0.00	.93	5.73	.99	.79	2.
5/ 3/76	22.	-4.	9.	5	0.0	88.	15.	52.	4.9	3.0	3.0	193.1	0.00	.87	4.91	.99	.79	2.
5/10/76	27.	-4.	11.	5	0.0	87.	16.	52.	4.9	3.0	3.1	157.7	0.00	.79	4.39	.83	.79	2.
5/17/76	27.	-2.	12.	5	0.0	88.	15.	52.	4.9	3.0	3.3	199.5	0.00	.92	5.12	.93	.79	2.
5/24/76	26.	-2.	12.	5	0.0	95.	20.	58.	5.4	3.3	3.1	197.9	0.00	.71	3.98	.34	.79	2.
5/31/76	27.	1.	14.	5	0.0	93.	15.	54.	5.1	3.2	3.8	260.1	0.00	.98	5.50	.27	.79	2.
6/ 7/76	25.	2.	14.	5	0.0	96.	20.	58.	5.4	3.3	3.5	225.8	0.00	.99	5.58	.32	.79	2.
6/14/76	29.	4.	17.	5	0.0	93.	15.	54.	5.1	3.2	3.2	222.1	0.00	.93	5.23	.17	.79	2.
6/21/76	31.	4.	18.	5	0.0	95.	15.	55.	5.2	3.2	3.6	149.6	0.00	.79	4.46	.34	.79	2.
6/28/76	31.	6.	19.	5	0.0	93.	15.	54.	5.1	3.2	3.3	133.5	0.00	.98	5.50	.91	.79	2.
7/ 5/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	103.5	0.00	.99	5.58	.55	.79	2.
7/12/76	33.	6.	20.	5	0.0	95.	15.	54.	5.1	3.2	3.1	156.6	0.00	.99	5.58	.80	.79	2.
7/19/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	178.6	0.00	.98	5.55	.54	.79	2.
7/26/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	131.9	0.00	.96	5.41	.53	.79	2.
8/ 2/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	146.4	0.00	.98	5.55	.02	.79	2.
8/ 9/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	90.0	0.00	.96	5.41	.38	.79	2.
8/16/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	209.2	0.00	.96	5.41	.32	.79	2.
8/23/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	202.7	0.00	.96	5.41	.25	.79	2.
8/30/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	165.7	0.00	.96	5.41	.06	.79	2.
9/ 6/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	128.7	0.00	.96	5.41	.15	.79	2.
9/13/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	117.3	0.00	.96	5.41	.16	.79	2.
9/20/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	93.3	0.00	.96	5.41	.13	.79	2.
9/27/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	99.4	0.00	.96	5.41	.13	.79	2.
10/ 4/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	107.5	0.00	.96	5.41	.16	.79	2.
10/11/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	107.8	0.00	.96	5.41	.13	.79	2.
10/18/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	99.8	0.00	.96	5.41	.13	.79	2.
10/25/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	130.0	0.00	.96	5.41	.13	.79	2.
11/ 1/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	104.6	0.00	.96	5.41	.16	.79	2.
11/ 8/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	40.6	0.00	.96	5.41	.13	.79	2.
11/15/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	77.2	0.00	.96	5.41	.13	.79	2.
11/22/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	106.2	0.00	.96	5.41	.16	.79	2.
11/29/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	0.0	0.00	.96	5.41	.13	.79	2.
12/ 6/76	33.	6.	20.	5	0.0	96.	15.	55.	5.2	3.2	3.1	0.0	0.00	.96	5.41	.13	.79	2.
12/13/76	9.5	-11.	0.	5	0.0	100.	27.	63.	4.3	2.7	1.6	106.2	0.00	.60	3.13	.58	.79	2.
12/20/76	10.5	-22.	-6.	5	0.0	98.	27.	63.	4.3	2.7	1.6	106.2	0.00	.60	3.13	.58	.79	2.
12/27/76	10.5	-20.	-5.	5	0.0	98.	27.	63.	4.3	2.7	1.6	106.2	0.00	.60	3.13	.58	.79	2.

TABLE 82. CLIMATOLOGICAL DATA FOR ELKO NEVADA HALLECK STATION 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 230.00,CASE A																	
1/ 3/77	-1.0	-30.0	-15.5	0.0	99.	41.	70.	1.8	1.3	2.5	159.3	0.00	.64	3.33	.77	.86	2.00
1/10/77	4.0	-26.0	-11.0	0.0	100.	54.	77.	2.7	2.0	1.4	88.5	0.00	.57	3.23	.81	.91	2.00
1/17/77	7.0	-18.0	-5.5	0.0	100.	41.	71.	4.1	2.9	.8	54.7	0.00	.51	3.18	.86	2.18	2.00
1/24/77	7.0	-21.0	-7.0	0.0	98.	30.	64.	3.6	2.3	1.2	77.2	0.00	.81	4.44	1.16	1.12	2.00
1/31/77	8.0	-19.0	-5.5	0.0	97.	34.	66.	4.1	2.7	1.2	77.2	0.00	.78	4.66	1.28	4.09	2.00
2/ 7/77	12.5	-17.0	-2.3	0.0	100.	23.	62.	5.2	3.2	1.4	90.1	0.00	.75	4.79	1.42	.28	2.00
2/14/77	17.0	-16.0	.5	0.0	99.	16.	58.	6.3	3.7	1.5	99.8	0.00	.85	5.56	1.67	.29	2.00
2/21/77	6.0	-15.0	-4.5	0.0	100.	41.	71.	4.4	3.1	3.7	236.5	0.00	.42	4.08	1.74	.28	2.00
2/28/77	10.0	-13.0	-1.5	0.0	99.	27.	63.	5.5	3.5	2.9	186.6	0.00	.75	5.95	2.27	.18	2.00
3/ 7/77	9.0	-16.0	-3.5	0.0	98.	30.	64.	4.7	3.0	3.0	193.1	0.00	.64	5.92	2.54	.15	2.00
3/14/77	4.0	-21.0	-6.5	0.0	97.	33.	65.	3.8	2.5	3.4	222.0	0.00	.57	5.90	2.74	.10	2.00
3/21/77	17.0	-14.0	1.5	0.0	100.	17.	59.	6.8	4.0	3.7	238.1	0.00	.95	8.48	3.62	.03	2.00
3/28/77	9.0	-13.0	-2.0	0.0	99.	26.	63.	5.3	3.3	4.7	304.1	0.00	.59	6.77	3.29	.03	2.00
4/ 4/77	24.0	-9.0	7.5	0.0	99.	12.	56.	10.4	5.8	2.9	185.0	0.00	1.00	10.23	4.77	.28	2.00
4/11/77	22.0	-11.0	5.5	0.0	100.	11.	56.	9.0	5.0	2.5	159.3	0.00	1.00	10.71	5.12	.28	2.00
4/18/77	25.0	-12.0	6.5	0.0	99.	13.	56.	9.7	5.4	2.4	154.5	0.00	1.00	11.85	5.98	2.03	2.00
4/25/77	24.0	-2.0	11.0	0.0	97.	24.	61.	13.1	8.0	2.7	173.8	0.00	.73	9.08	4.68	2.03	2.00
5/ 2/77	16.0	-3.0	6.5	0.0	100.	28.	64.	9.7	6.2	3.7	239.7	0.00	.53	8.26	4.44	3.20	2.00
5/ 9/77	20.0	0.0	10.0	0.0	97.	23.	60.	12.3	7.4	2.7	177.0	0.00	.70	9.47	5.04	2.72	2.00
5/16/77	20.0	-4.0	8.0	0.0	99.	24.	62.	10.7	6.6	3.4	217.2	0.00	.38	7.17	4.13	3.46	2.00
5/23/77	16.0	-1.0	7.5	0.0	97.	22.	60.	10.4	6.2	3.3	212.4	0.00	.58	8.93	4.92	3.73	2.00
5/30/77	30.0	-2.0	14.0	0.0	97.	19.	58.	16.0	9.3	2.0	131.9	0.00	.98	12.38	6.54	6.60	2.00
6/ 6/77	30.0	7.0	18.5	0.0	96.	26.	61.	21.3	13.0	2.6	168.9	0.00	.56	8.99	5.16	6.12	2.00
6/13/77	26.0	2.0	14.0	0.0	97.	20.	59.	16.0	9.4	2.3	146.4	0.00	.77	10.93	5.99	7.04	2.00
6/20/77	31.0	3.5	17.3	0.0	97.	24.	61.	19.7	11.9	1.4	88.5	0.00	.78	10.34	5.79	5.94	2.00
6/27/77	30.0	4.0	17.0	0.0	96.	22.	59.	19.4	11.4	2.0	127.1	0.00	.79	10.97	6.04	7.34	2.00
7/ 4/77	29.0	1.0	15.0	0.0	96.	18.	57.	17.1	9.7	1.8	115.8	0.00	.97	12.46	6.62	7.70	2.00
7/11/77	32.0	2.0	17.0	0.0	93.	17.	55.	19.4	10.7	1.5	96.5	0.00	.91	11.82	6.30	7.62	2.00
7/18/77	31.0	5.0	18.0	0.0	96.	26.	61.	20.7	12.6	1.6	106.2	0.00	.64	9.42	5.28	6.58	2.00
7/25/77	33.0	1.0	17.0	0.0	94.	15.	55.	19.4	10.6	1.2	80.5	0.00	1.00	12.90	6.89	7.14	2.00
8/ 1/77	35.0	5.0	20.0	0.0	97.	15.	56.	23.4	13.1	1.4	91.7	0.00	.50	7.85	4.43	6.07	2.00
8/ 8/77	32.0	2.0	17.0	0.0	97.	18.	58.	19.4	11.2	1.8	119.1	0.00	.81	10.10	5.30	7.70	2.00
8/15/77	33.0	8.0	20.5	0.0	97.	14.	56.	24.1	13.4	1.7	112.6	0.00	.62	8.40	4.55	5.77	2.00
8/22/77	31.0	-2.0	14.5	0.0	98.	18.	58.	16.5	9.6	2.7	173.8	0.00	.72	8.77	4.49	6.25	2.00
8/29/77	32.0	-2.0	15.0	0.0	98.	19.	59.	17.1	10.0	1.3	86.9	0.00	.94	9.91	4.81	2.39	2.00
9/ 5/77	33.0	-4.0	14.5	0.0	97.	18.	58.	16.5	9.5	1.6	104.6	0.00	1.00	13.80	7.56	8.38	2.00
9/15/77	23.0	-5.0	9.0	0.0	98.	13.	56.	11.5	6.4	2.3	149.6	0.00	.79	7.99	3.63	4.29	2.00
9/22/77	25.0	-7.0	9.0	0.0	98.	11.	55.	11.5	6.3	2.1	136.8	0.00	.94	8.40	3.54	5.49	2.00
9/29/77	22.0	-7.0	7.5	0.0	99.	11.	55.	10.4	5.7	1.1	72.4	0.00	.75	6.89	2.89	3.15	2.00
10/ 5/77	24.0	-10.0	7.0	0.0	100.	18.	59.	10.0	5.9	1.0	66.0	0.00	.79	6.66	2.68	3.23	2.00
10/12/77	26.0	-5.0	10.5	0.0	99.	17.	58.	12.7	7.4	.5	35.4	0.00	.82	6.38	2.39	2.39	2.00
10/17/77	25.0	-8.0	8.5	0.0	100.	18.	59.	11.1	6.6	.7	43.4	0.00	.79	5.93	2.13	3.05	2.00
10/24/77	24.0	-8.0	8.0	0.0	100.	22.	61.	10.7	6.6	1.9	123.9	0.00	.79	5.51	1.84	1.78	2.00
10/31/77	20.0	-10.0	5.0	0.0	100.	22.	61.	8.7	5.3	2.4	157.7	0.00	.92	5.64	1.59	3.45	2.00
11/ 7/77	15.0	-13.0	1.5	0.0	97.	19.	58.	6.8	4.0	1.2	75.6	0.00	.58	4.00	1.22	1.02	2.00
11/14/77	13.0	-25.0	-6.0	0.0	100.	21.	61.	3.9	2.4	3.0	196.3	0.00	.80	4.42	1.04	1.63	2.00
11/21/77	14.0	-12.0	1.0	0.0	98.	43.	71.	6.6	4.6	.4	25.7	0.00	.27	2.48	.92	1.63	2.00
11/28/77	14.0	-6.0	4.0	0.0	99.	30.	65.	8.1	5.3	.4	25.7	0.00	.47	2.99	.76	.36	2.00
12/ 5/77	12.0	-11.0	.5	0.0	98.	22.	60.	6.3	3.8	.3	20.9	0.00	.41	2.67	.66	.03	2.00
12/12/77	11.0	-6.0	2.5	0.0	100.	40.	70.	7.3	5.1	.5	33.8	0.00	.55	2.91	.53	2.44	2.00
12/19/77	7.0	-8.0	-.5	0.0	99.	45.	72.	5.9	4.3	2.4	156.1	0.00	1.00	4.27	.45	.48	2.00
12/26/77	3.0	-20.0	-8.5	0.0	98.	47.	73.	3.2	2.3	1.6	104.6	0.00	.63	3.21	.62	1.12	2.00

TABLE 83. CLIMATOLOGICAL DATA FOR DIAMOND VALLEY EUREKA NEVADA 1976

TABLE 84. CLIMATOLOGICAL DATA FOR DIAMOND VALLEY EUREKA NEVADA 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH 200.00,CASE A																	
1/ 4/77	3.5	-26.0	-11.3	0.0	99.	35.	67.	2.6	1.7	1.5	94.9	0.00	.42	2.84	.85	.36	
1/11/77	10.0	-22.0	-6.0	0.0	100.	24.	62.	3.9	2.4	1.0	64.4	0.00	.42	2.91	.85	.36	
1/18/77	12.0	-13.0	-.5	0.0	100.	35.	68.	5.9	4.0	.8	49.9	0.00	.38	2.92	.95	.41	
1/25/77	10.0	-17.0	-3.5	0.0	96.	23.	60.	4.7	2.8	1.2	80.5	0.00	.64	4.05	1.13	1.19	
2/ 1/77	12.0	-16.0	-2.0	0.0	100.	20.	60.	5.3	3.2	1.7	107.8	0.00	.63	4.23	1.30	1.19	
2/ 8/77	15.5	-11.0	2.3	0.0	100.	16.	58.	5.2	4.2	2.3	146.4	0.00	.61	4.44	1.47	1.24	
2/15/77	19.0	-13.0	3.0	0.0	100.	10.	55.	7.6	4.2	1.8	119.1	0.00	.64	4.86	1.67	1.24	
2/22/77	11.0	-13.0	-1.0	0.0	100.	20.	60.	5.7	3.4	3.0	193.1	0.00	.79	5.92	2.13	.79	
3/ 1/77	14.0	-16.0	-1.0	0.0	100.	20.	60.	5.7	3.4	3.1	197.9	0.00	.79	6.02	2.43	.79	
3/ 8/77	14.0	-16.0	-1.0	0.0	100.	17.	59.	5.7	3.3	3.5	226.9	0.00	.79	6.89	2.84	.79	
3/15/77	14.0	-11.0	1.5	0.0	100.	20.	60.	6.8	4.1	3.4	220.4	0.00	.79	7.31	3.16	.79	
3/22/77	18.0	-14.0	2.0	0.0	93.	11.	52.	7.1	3.7	3.7	239.7	0.00	.78	7.68	3.40	.79	
3/29/77	13.0	-16.0	-1.5	0.0	100.	19.	60.	5.5	3.3	3.3	214.0	0.00	.76	7.97	3.75	.79	
4/ 5/77	23.0	-8.0	7.5	0.0	100.	10.	55.	10.4	5.7	3.3	215.6	0.00	1.00	10.00	4.59	5.59	
4/12/77	23.0	-10.0	6.5	0.0	99.	8.	54.	9.7	5.2	3.6	230.1	0.00	1.00	10.69	5.09	5.99	
4/19/77	24.0	-10.0	7.0	0.0	74.	12.	43.	10.0	4.3	3.2	206.0	0.00	1.00	10.97	5.16	5.77	
4/26/77	23.0	-4.0	9.5	0.0	99.	20.	60.	11.9	7.1	2.8	183.4	0.00	.89	10.44	5.25	5.74	
5/ 3/77	16.0	-6.0	5.0	0.0	100.	20.	60.	8.7	5.2	4.2	273.5	0.00	.72	9.44	4.93	3.53	
5/10/77	18.0	-2.0	8.0	0.0	100.	18.	59.	10.7	6.3	3.7	238.1	0.00	.52	8.11	4.46	4.83	
5/17/77	21.0	-4.0	8.5	0.0	100.	17.	59.	11.1	6.5	2.6	168.9	0.00	.41	7.34	4.20	2.57	
5/24/77	23.0	-1.0	11.0	0.0	99.	40.	70.	13.1	9.1	2.2	144.8	0.00	.72	10.15	5.59	4.17	
5/31/77	31.0	4.0	17.5	0.0	99.	17.	58.	20.0	11.6	2.1	136.4	0.00	1.00	12.92	6.98	6.53	
6/ 7/77	27.5	3.5	15.5	0.0	99.	27.	63.	17.6	11.1	2.4	152.9	0.00	.54	8.84	5.06	3.81	
6/14/77	27.5	2.0	14.5	0.0	100.	20.	60.	16.5	9.9	1.8	119.1	0.00	.83	11.51	6.29	4.53	
6/21/77	34.5	4.0	19.3	0.0	99.	17.	58.	22.3	13.0	2.0	128.7	0.00	.77	10.93	6.09	5.44	
6/28/77	33.0	6.0	19.5	0.0	100.	16.	58.	22.7	13.2	2.7	172.2	0.00	.85	11.48	6.32	6.83	
7/ 5/77	29.0	2.0	15.5	0.0	95.	12.	54.	17.6	9.4	2.1	136.8	0.00	1.00	13.02	6.92	7.09	
7/12/77	31.0	7.0	19.0	0.0	97.	17.	57.	22.0	12.5	2.2	141.6	0.00	.91	11.83	6.40	6.68	
7/19/77	29.5	7.5	18.5	0.0	100.	25.	63.	21.3	13.3	1.7	112.6	0.00	.57	8.86	5.04	3.81	
7/26/77	34.0	4.0	19.0	0.0	93.	14.	54.	22.0	11.8	1.6	101.4	0.00	1.00	12.31	6.48	4.90	
8/ 2/77	34.0	6.0	20.0	0.0	98.	11.	55.	23.4	12.8	1.8	119.1	0.00	.69	9.37	5.09	4.98	
8/ 9/77	33.0	4.0	18.5	0.0	98.	10.	54.	21.3	11.5	1.7	111.0	0.00	.96	11.22	5.77	5.44	
8/16/77	31.0	9.0	20.0	0.0	98.	20.	59.	23.4	13.8	1.7	109.4	0.00	.52	7.68	4.27	2.64	
8/23/77	27.0	1.0	14.0	0.0	100.	24.	62.	16.0	9.9	2.1	135.2	0.00	.85	9.76	4.94	3.81	
8/30/77	33.0	3.0	18.0	0.0	100.	16.	58.	20.7	12.0	1.7	109.4	0.00	.92	9.79	4.84	4.57	
9/ 6/77	30.0	3.0	16.5	0.0	99.	20.	60.	18.8	11.2	1.8	114.2	0.00	.81	8.67	4.26	3.78	
9/13/77	24.0	-3.0	10.5	0.0	99.	27.	63.	12.7	8.0	3.6	233.3	0.00	.62	7.11	3.49	2.64	
9/20/77	27.0	-7.0	13.0	0.0	99.	8.	54.	12.3	6.6	2.1	135.2	0.00	.73	7.41	3.34	3.28	
9/27/77	25.0	-5.0	10.0	0.0	100.	13.	57.	12.3	6.9	2.1	135.2	0.00	.91	7.99	3.35	3.56	
10/ 4/77	24.0	-7.0	8.5	0.0	100.	12.	56.	11.1	6.2	1.9	125.5	0.00	.84	7.12	2.87	4.50	
10/11/77	26.0	-4.0	11.0	0.0	100.	18.	59.	13.1	7.8	1.4	88.5	0.00	.85	6.75	2.60	2.82	
10/18/77	26.0	-6.0	10.0	0.0	100.	23.	62.	12.3	7.6	1.5	99.8	0.00	.58	5.05	2.03	2.72	
10/25/77	24.0	-5.0	9.5	0.0	99.	26.	63.	11.9	7.4	3.5	228.5	0.00	.60	4.79	1.80	3.58	
11/ 1/77	21.0	-12.0	4.5	0.0	100.	24.	62.	8.4	5.2	2.4	156.1	0.00	.44	3.84	1.46	1.75	
11/ 8/77	17.0	-12.0	2.5	0.0	99.	15.	57.	7.3	4.5	1.6	104.6	0.00	.58	4.11	1.28	1.24	
11/15/77	15.0	-22.0	-3.5	0.0	99.	5.	52.	4.7	2.5	3.0	193.1	0.00	.31	2.52	1.04	1.24	
11/22/77	18.0	-7.0	5.5	0.0	100.	14.	57.	9.0	5.2	2.6	167.3	0.00	.45	3.20	.92	1.24	
11/29/77	15.0	-8.0	3.5	0.0	100.	20.	60.	7.9	4.7	2.9	188.3	0.00	.41	2.91	.84	1.80	
12/ 6/77	16.0	-12.0	2.0	0.0	99.	8.	54.	7.1	3.8	2.3	146.4	0.00	.45	2.92	.69	.43	
12/13/77	15.0	-21.0	-3.0	0.0	100.	26.	63.	4.9	3.1	2.7	173.8	0.00	.10	1.73	.77	.43	
12/20/77	6.0	-27.0	-10.5	0.0	99.	39.	69.	2.8	1.9	2.0	127.1	0.00	.41	2.64	.74	.43	
12/27/77	7.0	-17.0	-5.0	0.0	100.	40.	70.	4.2	3.0	.9	61.1	0.00	.50	2.99	.74	.43	

TABLE 85. CLIMATOLOGICAL DATA FOR PAHRUMP VALLEY NEVADA 1974

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	EO	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF	FETCH	100.00	CASE A														
1/ 3/74	9.4	-12.8	-1.7	0.0	100.	40.	70.	5.4	3.8	5.3	384.6	0.00	.24	2.62	1.10	0.00	2
1/10/74	16.7	-2.2	7.2	0.0	100.	52.	76.	10.2	7.9	1.2	77.2	0.00	.39	3.25	1.21	0.00	2
1/17/74	17.2	-3.3	6.9	0.0	100.	39.	70.	10.2	6.9	3.1	199.2	0.00	.48	3.69	1.29	0.53	2
1/24/74	17.8	-3.9	6.9	0.0	92.	37.	65.	10.0	6.4	2.3	151.2	0.00	.74	3.95	1.55	0.89	2
1/31/74	18.9	-2.2	8.7	0.0	84.	36.	60.	11.0	6.6	3.3	234.9	0.00	.71	4.55	1.70	0.89	2
2/ 7/74	19.4	-5.0	7.2	0.0	84.	36.	60.	11.2	6.6	3.6	230.6	0.00	.73	4.55	1.91	0.44	2
2/14/74	20.6	-2.2	9.2	0.0	84.	40.	62.	11.6	7.2	3.5	152.9	0.00	.73	5.04	2.16	0.44	2
2/21/74	20.4	-3.3	8.9	0.0	96.	42.	69.	11.8	7.4	2.4	157.8	0.00	.88	5.04	2.47	0.88	2
2/28/74	21.1	-2.2	9.4	0.0	99.	43.	71.	11.8	7.6	2.4	221.0	0.00	.67	5.04	2.68	0.63	2
3/ 7/74	24.4	2.2	13.3	0.0	99.	43.	71.	11.8	7.6	2.2	141.6	0.00	.79	5.04	2.99	0.44	2
3/14/74	27.2	5.0	16.1	0.0	99.	39.	69.	11.8	7.8	2.9	185.0	0.00	.83	5.04	3.24	0.15	2
3/21/74	25.8	2.2	13.9	0.0	99.	40.	70.	11.8	7.8	2.5	226.9	0.00	.80	5.04	3.31	0.30	2
3/28/74	22.8	2.2	12.5	0.0	99.	40.	70.	11.8	7.8	3.5	230.1	0.00	.92	5.04	3.80	0.99	2
4/ 4/74	27.8	.6	14.2	0.0	99.	36.	68.	11.8	7.8	3.5	262.3	0.00	.69	5.04	3.82	0.24	2
4/11/74	28.3	.6	14.4	0.0	99.	32.	66.	11.8	7.9	3.3	210.8	0.00	.92	5.04	3.99	0.49	2
4/18/74	26.7	4.2	15.6	0.0	99.	38.	68.	11.8	7.9	3.7	175.5	0.00	.82	5.04	4.50	0.50	2
4/25/74	30.6	2.8	16.4	0.0	99.	40.	70.	11.8	7.9	3.7	307.3	0.00	.83	5.04	4.91	0.91	2
5/ 2/74	33.9	2.8	18.4	0.0	99.	38.	68.	11.8	7.9	3.7	194.7	0.00	.73	5.04	4.92	0.92	2
5/ 9/74	33.9	10.0	21.9	0.0	99.	38.	68.	11.8	7.9	3.7	130.3	0.00	.79	5.04	4.96	0.96	2
5/16/74	32.8	11.1	21.9	0.0	99.	35.	67.	11.8	7.9	3.7	160.9	0.00	.79	5.04	4.78	0.78	2
5/23/74	37.8	11.1	24.4	0.0	99.	35.	67.	11.8	7.9	3.6	209.2	0.00	.79	5.04	4.84	0.84	2
5/30/74	33.9	13.3	23.6	0.0	99.	32.	66.	11.8	7.9	3.6	186.6	0.00	.56	5.04	4.07	0.07	2
6/ 6/74	40.0	13.3	26.7	0.0	99.	34.	67.	11.8	7.9	3.6	230.1	0.00	.50	5.04	4.18	0.18	2
6/13/74	40.0	13.9	26.7	0.0	99.	34.	67.	11.8	7.9	3.6	220.4	0.00	.46	5.04	4.72	0.72	2
6/20/74	39.4	13.9	27.8	0.0	99.	34.	67.	11.8	7.9	3.6	162.5	0.00	.41	5.04	4.53	0.53	2
6/27/74	40.0	15.6	27.8	0.0	99.	32.	66.	11.8	7.9	3.6	168.9	0.00	.90	5.04	4.99	0.99	2
7/ 4/74	36.7	15.6	26.7	0.0	99.	28.	64.	11.8	7.9	3.7	128.3	0.00	.90	5.04	4.24	0.24	2
7/11/74	35.6	13.9	24.6	0.0	99.	33.	66.	11.8	7.9	3.7	122.2	0.00	.90	5.04	4.76	0.76	2
7/18/74	38.3	18.3	28.6	0.0	99.	36.	68.	11.8	7.9	3.7	172.2	0.00	.89	5.04	4.28	0.28	2
7/25/74	38.9	20.4	29.7	0.0	99.	36.	68.	11.8	7.9	3.7	131.4	0.00	.77	5.04	4.08	0.08	2
8/ 1/74	36.7	19.4	28.1	0.0	99.	36.	68.	11.8	7.9	3.7	98.1	0.00	.76	5.04	4.08	0.08	2
8/ 8/74	46.1	15.0	30.9	0.0	99.	32.	66.	11.8	7.9	3.7	106.2	0.00	.73	5.04	4.43	0.43	2
8/15/74	37.2	12.2	25.0	0.0	99.	33.	66.	11.8	7.9	3.7	156.1	0.00	.80	5.04	4.85	0.85	2
8/22/74	35.0	12.8	23.9	0.0	99.	38.	68.	11.8	7.9	3.7	99.8	0.00	.73	5.04	4.27	0.27	2
8/29/74	37.2	13.3	25.0	0.0	99.	36.	68.	11.8	7.9	3.7	98.1	0.00	.69	5.04	4.08	0.08	2
9/ 5/74	38.3	10.6	24.4	0.0	99.	36.	68.	11.8	7.9	3.7	107.8	0.00	.86	5.04	4.52	0.52	2
9/12/74	35.0	10.0	22.5	0.0	99.	38.	68.	11.8	7.9	3.7	90.1	0.00	.72	5.04	4.66	0.66	2
9/19/74	35.6	10.0	22.8	0.0	99.	38.	68.	11.8	7.9	3.7	107.8	0.00	.34	5.04	4.52	0.52	2
9/26/74	33.3	10.0	21.7	0.0	99.	38.	68.	11.8	7.9	3.7	90.1	0.00	.58	5.04	4.10	0.10	2
10/ 3/74	27.8	8.3	18.1	0.0	99.	37.	68.	11.8	7.9	3.7	99.8	0.00	.62	5.04	3.89	0.89	2
10/10/74	32.8	6.1	19.4	0.0	99.	33.	66.	11.8	7.9	3.7	98.1	0.00	.01	5.04	3.49	0.49	2
10/17/74	32.8	7.2	20.0	0.0	99.	33.	66.	11.8	7.9	3.7	107.8	0.00	.76	5.04	4.08	0.08	2
10/24/74	25.6	3.3	14.4	0.0	99.	47.	73.	11.8	7.9	3.7	90.1	0.00	.69	5.04	4.08	0.08	2
10/31/74	18.9	2.2	10.6	0.0	99.	40.	70.	11.8	7.9	3.7	162.5	0.00	.70	5.04	2.67	2.72	2
11/ 7/74	22.8	2.8	11.7	0.0	99.	40.	70.	11.8	7.9	3.7	96.5	0.00	.27	5.04	1.05	1.37	2
11/14/74	23.3	1.1	12.2	0.0	99.	40.	70.	11.8	7.9	3.7	70.8	0.00	.27	5.04	1.00	1.00	2
11/21/74	21.1	-4.4	8.6	0.0	99.	40.	70.	11.8	7.9	3.7	144.8	0.00	.27	5.04	1.41	1.41	2
11/28/74	16.7	-5.6	5.6	0.0	99.	40.	70.	11.8	7.9	3.7	106.2	0.00	.27	5.04	1.12	1.12	2
12/ 5/74	16.1	-4.4	5.8	0.0	99.	40.	70.	11.8	7.9	3.7	99.8	0.00	.27	5.04	1.18	1.18	2
12/12/74	18.3	-3.3	7.5	0.0	99.	40.	70.	11.8	7.9	3.7	122.3	0.00	.27	5.04	1.03	1.03	2
12/19/74	16.1	-10.6	2.8	0.0	99.	40.	70.	11.8	7.9	3.7	148.0	0.00	.27	5.04	1.00	1.00	2
12/26/74	11.1	-10.6	.3	0.0	96.	37.	67.	6.2	4.2	2.7	172.2	0.00	.27	2.67	1.05	2.72	2

377.98

TABLE 86. CLIMATOLOGICAL DATA FOR PAHRUMP VALLEY NEVADA 1975

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	EO	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH		100.00,CASE A															
1/ 2/75	15.6	-8.3	3.6	0.0	90.	35.	63.	7.9	5.0	1.7	109.4	0.00	.30	4.61	1.13	.13	2.
1/ 9/75	18.3	-6.7	5.8	0.0	76.	38.	57.	9.3	5.3	2.5	159.3	0.00	.98	5.34	1.17	2.38	2.
1/16/75	20.6	-4.4	8.1	0.0	69.	35.	52.	10.8	5.6	1.7	107.8	0.00	1.00	5.59	1.25	6.10	2.
1/23/75	22.8	-7.2	7.8	0.0	94.	34.	64.	10.6	6.8	1.9	120.7	0.00	.90	5.54	1.59	4.44	2.
1/30/75	15.0	-4.4	5.3	0.0	94.	33.	63.	8.9	5.6	3.7	243.0	0.00	.58	4.52	1.63	3.30	2.
2/ 6/75	18.9	-1.7	8.6	0.0	81.	39.	60.	11.2	6.7	2.6	165.7	0.00	.73	5.39	1.89	3.51	2.
2/13/75	18.3	-5.0	6.7	0.0	97.	36.	67.	9.8	6.5	4.9	318.6	0.00	.86	6.27	2.27	4.88	2.
2/20/75	22.8	-2.2	10.3	0.0	92.	32.	52.	12.5	6.5	2.8	181.8	0.00	1.00	7.43	2.64	4.34	2.
2/27/75	25.0	.6	12.8	0.0	92.	33.	63.	14.8	9.2	3.1	197.9	0.00	.81	6.85	2.94	4.37	2.
3/ 6/75	12.8	3.3	8.1	0.0	97.	40.	69.	10.8	7.4	2.8	180.2	0.00	.23	4.08	2.22	5.30	2.
3/13/75	22.8	-.6	11.1	0.0	96.	34.	65.	13.2	8.6	3.5	223.7	0.00	.79	7.65	3.50	2.99	2.
3/20/75	22.2	1.7	11.9	0.0	84.	34.	59.	14.2	8.3	6.3	410.3	0.00	.93	8.89	4.03	11.00	2.
3/27/75	20.0	-9.6	7.2	0.0	94.	33.	64.	10.2	6.5	4.0	262.3	0.00	.88	9.03	4.25	1.96	2.
4/ 3/75	21.1	.6	10.8	0.0	80.	32.	56.	13.0	7.3	4.9	315.4	0.00	.95	9.81	4.62	8.15	2.
4/10/75	21.7	1.1	11.4	0.0	96.	30.	63.	13.5	8.5	4.7	302.5	0.00	.79	9.15	4.61	6.32	2.
4/17/75	26.1	1.7	13.9	0.0	96.	30.	63.	15.9	10.0	2.5	164.1	0.00	.89	10.20	5.20	8.38	2.
4/24/75	23.3	3.3	13.3	0.0	82.	30.	46.	15.3	7.9	4.4	288.0	0.00	1.00	11.36	5.51	16.15	2.
5/ 1/75	27.2	2.8	15.0	0.0	57.	31.	44.	17.1	7.5	3.7	238.1	0.00	.91	11.00	5.46	8.15	2.
5/ 8/75	32.2	8.9	20.6	0.0	48.	30.	39.	24.2	9.4	1.6	103.0	0.00	.94	11.48	5.73	12.47	2.
5/15/75	31.1	3.5	17.5	0.0	95.	31.	63.	20.0	12.6	2.6	168.9	0.00	.49	8.11	4.66	6.85	2.
5/22/75	31.7	7.2	19.4	0.0	71.	33.	52.	22.6	11.8	2.3	149.6	0.00	.83	11.00	5.91	9.75	2.
5/29/75	34.4	12.2	23.3	0.0	53.	31.	42.	28.7	12.0	2.8	183.4	0.00	.81	11.00	5.85	12.22	2.
6/ 5/75	36.1	13.9	25.0	0.0	44.	31.	38.	31.7	11.6	2.8	183.4	0.00	.75	10.71	5.66	13.16	2.
6/12/75	37.8	15.0	26.4	0.0	45.	31.	38.	34.3	12.9	2.7	175.4	0.00	.83	11.37	6.06	13.41	2.
6/19/75	32.2	12.8	22.5	0.0	75.	36.	56.	27.3	15.1	3.7	236.5	0.00	.78	11.02	6.18	12.24	2.
6/26/75	34.4	8.9	21.7	0.0	49.	32.	41.	25.9	10.5	3.9	255.8	0.00	.90	11.93	6.24	12.70	2.
7/ 3/75	39.4	19.4	29.4	0.0	87.	34.	61.	41.8	24.9	2.9	189.9	0.00	.75	10.63	6.40	14.10	2.
7/10/75	38.3	19.4	28.8	0.0	62.	32.	47.	39.8	18.7	2.8	180.2	0.00	.89	11.70	6.53	12.32	2.
7/17/75	37.8	15.6	26.7	0.0	61.	36.	49.	35.0	17.0	2.6	170.6	0.00	.83	11.00	6.14	9.58	2.
7/24/75	40.0	18.9	29.4	0.0	54.	34.	44.	41.1	18.1	2.8	181.8	0.00	.76	10.30	5.72	11.89	2.
7/31/75	39.4	13.9	26.7	0.0	40.	31.	36.	35.8	12.4	2.2	141.6	0.00	.92	11.37	5.75	14.07	2.
8/ 7/75	46.1	15.0	30.6	0.0	48.	34.	41.	43.8	18.0	2.6	165.7	0.00	.90	11.03	5.90	15.19	2.
8/14/75	33.9	13.9	23.9	0.0	64.	34.	49.	29.7	14.5	3.3	214.0	0.00	.77	9.83	5.24	10.87	2.
8/21/75	35.1	15.0	25.6	0.0	77.	36.	57.	32.8	16.5	2.6	165.7	0.00	.89	10.42	5.64	11.96	2.
8/28/75	35.0	13.3	24.6	0.0	51.	36.	44.	30.2	13.1	2.3	148.0	0.00	.79	9.32	4.69	12.70	2.
9/ 4/75	36.1	15.0	25.6	0.0	90.	34.	62.	32.8	20.3	1.9	122.3	0.00	.77	8.84	4.84	8.05	2.
9/11/75	34.4	13.3	23.9	0.0	94.	35.	65.	29.7	19.1	1.7	107.8	0.00	.80	8.67	4.63	8.38	2.
9/18/75	34.4	10.0	22.9	0.0	68.	34.	51.	26.8	13.7	1.4	88.5	0.00	.88	8.84	4.22	8.26	2.
9/25/75	32.8	11.1	21.9	0.0	54.	34.	44.	26.4	11.6	1.4	88.5	0.00	.99	9.06	3.95	8.00	2.
10/ 2/75	32.2	4.4	18.3	0.0	96.	37.	67.	21.1	14.0	2.1	133.5	0.00	.89	8.04	3.76	7.65	2.
10/ 9/75	25.0	2.2	13.7	0.0	96.	30.	63.	15.6	9.8	2.8	180.2	0.00	.69	6.55	2.94	6.27	2.
10/16/75	30.0	3.3	16.7	0.0	75.	33.	54.	19.0	10.3	.9	59.5	0.00	.89	7.19	2.89	2.54	2.
10/23/75	23.9	-6.1	9.9	0.0	71.	36.	54.	11.4	6.1	4.7	307.3	0.00	.88	6.78	2.47	8.15	2.
10/30/75	28.9	3.3	16.1	0.0	74.	35.	55.	18.3	10.0	2.3	149.6	0.00	1.00	7.38	2.72	5.59	2.
11/ 6/75	25.0	1.1	13.1	0.0	66.	38.	52.	15.0	7.8	1.9	122.3	0.00	.88	6.34	1.92	5.44	2.
11/13/75	25.6	-7.2	9.2	0.0	70.	36.	53.	11.6	6.2	2.6	170.6	0.00	.75	5.27	1.54	4.19	2.
11/20/75	24.7	-4.4	8.6	0.0	62.	40.	51.	11.2	5.7	1.3	85.3	0.00	.71	4.69	1.33	2.97	2.
11/27/75	23.3	-7.2	8.1	0.0	94.	34.	64.	10.8	6.9	2.3	151.2	0.00	.56	3.96	1.27	2.64	2.
12/ 4/75	23.9	-.6	11.7	0.0	78.	36.	57.	13.7	7.8	.8	54.7	0.00	.80	4.66	1.16	2.64	2.
12/11/75	-2.2	-7.8	-5.0	0.0	95.	34.	65.	4.2	2.7	2.9	185.0	0.00	.61	3.84	1.08	5.44	2.
12/18/75	16.9	-4.4	7.2	0.0	88.	34.	61.	10.2	6.2	1.3	82.1	0.00	1.00	5.20	1.06	5.08	2.
12/25/75	18.3	-10.0	4.2	0.0	78.	40.	59.	8.2	4.9	2.6	170.6	0.00	.47	3.38	1.02	1.32	2.

TABLE 87. CLIMATOLOGICAL DATA FOR PAHRUMP VALLEY NEVADA 1976

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH		100.00,CASE A															
1/ 1/76	16.1	-7.8	4.2	0.0	62.	38.	50.	8.2	4.1	.4	27.4	0.00	.83	4.71	1.01	1.78	2.00
1/ 8/76	23.3	-3.9	9.7	0.0	64.	35.	50.	12.1	6.0	.6	40.2	0.00	.90	5.05	1.08	2.29	2.00
1/15/76	23.9	-5.0	9.4	0.0	58.	37.	48.	11.8	5.6	.9	57.9	0.00	.72	4.51	1.12	3.38	2.00
1/22/76	22.8	-2.8	10.0	0.0	56.	32.	41.	12.3	5.0	1.7	109.4	0.00	.97	5.75	1.30	1.52	2.00
1/29/76	23.9	-1.7	11.1	0.0	56.	34.	45.	13.2	6.0	2.0	127.1	0.00	.33	5.43	1.38	2.44	2.00
2/ 5/76	16.7	5.0	10.8	0.0	96.	66.	81.	13.2	10.5	2.9	188.3	0.00	.75	5.46	1.10	.79	2.00
2/12/76	19.4	2.8	11.1	0.0	90.	38.	64.	13.2	8.5	1.8	115.8	0.00	.75	5.78	1.17	0.00	2.00
2/19/76	13.3	-4.4	4.4	0.0	80.	36.	58.	8.5	4.9	1.5	159.3	0.00	1.00	7.40	1.66	0.54	2.00
2/26/76	27.8	2.8	15.3	0.0	94.	36.	65.	17.4	11.3	3.8	247.8	0.00	.91	7.31	2.03	4.93	2.00
3/ 4/76	20.6	-1.7	9.4	0.0	78.	34.	56.	11.8	6.6	.7	45.1	0.00	.97	7.14	3.28	4.06	2.00
3/11/76	25.0	1.1	13.1	0.0	80.	28.	54.	15.0	8.1	2.2	148.5	0.00	.93	8.35	3.56	5.59	2.00
3/18/76	25.1	1.7	13.9	0.0	53.	30.	42.	15.9	6.6	2.5	162.8	0.00	.98	9.11	3.79	8.13	2.00
3/25/76	23.3	.6	11.9	0.0	47.	32.	40.	14.0	5.5	2.5	247.8	0.00	1.00	9.66	4.12	8.74	2.00
4/ 1/76	25.6	2.2	13.9	0.0	100.	39.	70.	15.9	11.0	2.5	160.9	0.00	1.00	10.44	5.20	8.23	2.00
4/ 8/76	24.3	2.8	13.6	0.0	100.	46.	73.	15.6	11.4	2.8	161.8	0.00	.76	10.82	5.59	8.26	2.00
4/15/76	28.3	3.3	15.8	0.0	100.	48.	74.	18.0	13.3	3.0	194.7	0.00	.94	10.54	5.53	8.13	2.00
4/22/76	28.9	3.8	16.4	0.0	100.	48.	74.	18.4	13.7	3.5	194.1	0.00	.99	11.22	5.15	8.79	2.00
4/29/76	30.6	9.4	20.0	0.0	50.	16.	33.	18.0	5.7	2.6	154.1	0.00	1.00	11.63	5.26	9.65	2.00
5/ 6/76	31.7	8.3	20.0	0.0	95.	16.	57.	23.4	13.2	2.2	144.8	0.00	.80	11.31	5.56	9.15	2.00
5/13/76	35.0	11.1	23.1	0.0	54.	16.	35.	23.4	8.2	2.1	104.6	0.00	.89	11.44	5.77	12.45	2.00
5/20/76	33.9	10.7	21.9	0.0	64.	16.	39.	22.8	9.2	2.2	144.8	0.00	.89	11.82	5.77	11.98	2.00
5/27/76	34.4	11.7	23.1	0.0	76.	19.	47.	23.4	10.8	2.3	117.5	0.00	1.00	12.68	6.55	11.45	2.00
6/ 3/76	32.8	11.1	21.9	0.0	44.	16.	30.	22.6	6.7	2.3	149.6	0.00	1.00	12.60	6.43	11.46	2.00
6/10/76	33.9	7.2	20.6	0.0	51.	20.	35.	24.2	10.8	2.6	209.4	0.00	.76	10.74	6.05	13.11	2.00
6/17/76	41.1	15.0	28.1	0.0	100.	17.	58.	37.9	21.8	2.6	101.4	0.00	.97	12.60	6.27	13.87	2.00
6/24/76	39.4	13.3	26.4	0.0	100.	20.	60.	34.4	20.5	2.6	148.0	0.00	.89	11.88	6.05	11.71	2.00
7/ 1/76	38.9	13.3	26.1	0.0	100.	18.	59.	33.9	19.5	2.6	189.7	0.00	.94	12.21	6.27	7.11	2.00
7/ 8/76	37.8	16.7	27.2	0.0	100.	18.	59.	36.1	21.5	2.6	165.7	0.00	.94	11.95	5.90	8.03	2.00
7/15/76	38.3	15.6	26.9	0.0	100.	18.	59.	35.6	21.0	2.6	167.3	0.00	.89	9.84	5.13	6.35	2.00
7/22/76	38.9	17.2	28.1	0.0	100.	23.	62.	37.9	23.3	2.6	146.4	0.00	.67	10.37	5.90	9.32	2.00
7/29/76	36.7	14.4	25.6	0.0	100.	18.	59.	32.8	19.3	2.4	152.9	0.00	.75	9.76	5.56	12.52	2.00
8/ 5/76	35.0	10.6	22.8	0.0	100.	18.	59.	27.7	16.6	2.4	157.7	0.00	1.00	12.14	6.05	10.92	2.00
8/12/76	36.1	12.2	24.4	0.0	100.	18.	59.	30.2	18.5	2.4	156.1	0.00	.85	10.51	5.69	8.38	2.00
8/19/76	36.7	10.8	23.1	0.0	100.	18.	59.	30.4	18.3	2.3	146.4	0.00	.81	9.88	5.14	8.68	2.00
8/26/76	37.8	14.4	26.1	0.0	100.	26.	63.	33.9	21.3	2.3	119.1	0.00	.79	9.37	4.68	8.03	2.00
9/ 2/76	38.9	14.4	26.7	0.0	100.	21.	61.	35.0	21.3	2.3	146.4	0.00	.73	8.65	3.93	7.70	2.00
9/ 9/76	31.1	12.8	21.9	0.0	94.	26.	60.	23.8	14.3	2.3	146.4	0.00	.93	7.17	3.22	7.37	2.00
9/16/76	30.0	10.8	20.3	0.0	100.	32.	66.	25.5	16.8	1.7	103.6	0.00	.87	8.64	3.29	6.35	2.00
9/23/76	30.0	12.8	21.4	0.0	100.	24.	62.	25.1	15.8	1.7	112.6	0.00	.87	8.50	3.29	4.29	2.00
9/30/76	30.6	6.1	18.3	0.0	100.	21.	61.	21.1	13.1	1.8	115.8	0.00	.90	8.21	3.79	4.79	2.00
10/ 7/76	29.4	7.2	18.3	0.0	100.	24.	62.	21.1	13.1	1.7	109.4	0.00	.92	7.91	3.79	4.31	2.00
10/14/76	28.3	5.6	16.9	0.0	90.	24.	57.	19.3	11.0	1.4	90.1	0.00	.80	7.85	3.89	4.83	2.00
10/21/76	22.8	-2.2	10.3	0.0	100.	18.	59.	12.5	7.4	.9	189.9	0.00	.96	7.28	3.72	4.88	2.00
10/28/76	26.7	-1.7	12.5	0.0	100.	22.	61.	14.5	7.8	.9	168.9	0.00	.86	7.38	3.89	4.29	2.00
11/ 4/76	25.0	-1.7	11.7	0.0	97.	30.	65.	13.7	7.8	.9	109.4	0.00	.81	6.80	3.70	3.15	2.00
11/11/76	21.7	-2.2	9.7	0.0	100.	30.	65.	12.1	7.8	.9	135.2	0.00	.69	6.93	3.46	3.79	2.00
11/18/76	21.7	-2.8	9.9	0.0	94.	30.	62.	11.8	7.6	1.1	122.5	0.00	.63	5.44	2.70	3.68	2.00
11/25/76	19.4	-11.7	3.9	0.0	78.	30.	54.	8.1	4.6	1.3	117.5	0.00	.57	5.54	1.37	2.23	2.00
12/ 2/76	16.7	-8.9	3.9	0.0	80.	30.	55.	8.1	4.6	1.0	91.8	0.00	.82	5.81	1.15	1.64	2.00
12/ 9/76	20.0	-6.1	6.9	0.0	80.	33.	56.	8.8	5.3	1.0	114.2	0.00	.98	5.15	1.02	2.79	2.00
12/16/76	17.2	-10.6	3.3	0.0	80.	33.	56.	7.8	4.6	.6	41.8	0.00	.81	5.44	.91	2.29	2.00
12/23/76	18.3	-10.0	4.2	0.0	100.	26.	63.	8.2	5.2	.9	57.9	0.00	.78	4.42	1.04	2.29	2.00

TABLE 88. CLIMATOLOGICAL DATA FOR PAHRUMP VALLEY NEVADA 1977

DATE (MDY)	TMAX	TMIN	TMEAN	TDEW	RHMAX	RHMIN	RHMEAN	EA	ED	UDAY	U24	SUNHRS	NRATIO	SOLRAD	RN	EPAN	URATIO
VALUES OF FETCH = 100.00, CASE A																	
1/ 1/77	10.0	-7.8	1.1	0.0	100.	26.	63.	6.6	4.2	2.0	127.1	0.00	.44	3.33	1.09	0.00	2.00
1/ 6/77	12.8	-10.6	1.1	0.0	100.	28.	64.	6.6	4.2	1.6	106.2	0.00	.79	4.62	1.18	1.24	2.00
1/13/77	18.3	-9.4	4.4	0.0	100.	24.	62.	8.4	5.2	.9	57.9	0.00	.73	4.51	1.22	2.72	2.00
1/20/77	15.0	-4.4	5.3	0.0	100.	28.	64.	8.9	5.7	1.0	64.4	0.00	.54	4.00	1.35	1.35	2.00
1/27/77	18.3	-6.7	5.8	0.0	81.	18.	50.	9.3	4.6	1.9	125.5	0.00	.85	5.53	1.56	2.72	2.00
2/ 3/77	18.9	-7.2	5.8	0.0	80.	24.	52.	9.3	4.8	1.4	90.1	0.00	1.00	6.82	2.17	5.44	2.00
2/10/77	24.4	-2.8	10.8	0.0	59.	21.	40.	13.0	5.2	1.8	119.1	0.00	1.00	6.92	2.07	4.90	2.00
2/17/77	25.6	-2.6	10.0	0.0	66.	20.	43.	12.3	5.3	4.1	267.1	0.00	1.00	8.21	3.09	7.62	2.00
2/24/77	17.2	-5.0	6.1	0.0	77.	28.	53.	9.4	5.0	2.7	177.0	0.00	.88	7.02	2.64	6.43	2.00
3/ 3/77	22.8	-5.6	8.6	0.0	60.	17.	39.	11.2	4.3	3.6	239.7	0.00	1.00	8.65	3.36	6.10	2.00
3/10/77	18.3	-6.7	5.8	0.0	60.	22.	41.	9.3	3.8	5.6	360.4	0.00	.96	8.43	3.36	7.37	2.00
3/17/77	23.9	-3.9	10.0	0.0	100.	20.	60.	12.3	7.4	3.3	212.4	0.00	.81	7.97	3.63	6.17	2.00
3/24/77	21.3	-1.4	10.3	0.0	100.	16.	58.	12.5	7.3	3.8	247.8	0.00	.66	7.40	3.57	6.88	2.00
3/31/77	28.3	-4.4	11.9	0.0	62.	19.	41.	14.0	5.7	3.3	214.0	0.00	.95	9.72	4.32	6.71	2.00
4/ 7/77	28.9	3.3	16.1	0.0	55.	16.	36.	18.3	6.5	3.2	209.2	0.00	1.00	11.10	5.14	8.15	2.00
4/14/77	27.2	1.7	14.4	0.0	46.	16.	30.	16.5	4.9	3.4	222.0	0.00	.97	10.68	4.78	8.81	2.00
4/21/77	30.6	3.1	16.7	0.0	72.	16.	44.	19.3	6.2	2.1	135.2	0.00	.81	9.79	4.64	9.50	2.00
4/28/77	27.6	6.1	16.3	0.0	100.	25.	61.	19.0	9.2	3.0	194.7	0.00	.72	9.40	4.86	9.54	2.00
5/ 5/77	23.9	2.8	13.3	0.0	100.	22.	61.	15.3	9.3	3.8	247.8	0.00	.71	9.54	5.11	9.54	2.00
5/12/77	22.3	4.4	13.3	0.0	100.	22.	62.	15.3	11.9	2.9	185.0	0.00	.78	9.72	5.27	9.54	2.00
5/19/77	28.3	5.8	16.9	0.0	65.	20.	43.	19.3	13.0	2.0	131.9	0.00	.52	8.38	4.78	9.72	2.00
5/26/77	36.1	12.8	24.9	0.0	60.	15.	38.	30.7	13.3	2.1	133.5	0.00	.71	10.08	5.46	8.38	2.00
6/ 2/77	40.6	13.3	26.8	0.0	88.	20.	54.	35.6	15.3	2.9	186.6	0.00	.63	9.55	5.22	10.08	2.00
6/ 9/77	34.4	11.1	22.8	0.0	65.	21.	43.	27.7	15.0	2.0	127.1	0.00	.98	12.58	6.89	9.55	2.00
6/16/77	36.1	10.6	23.3	0.0	62.	25.	44.	28.7	12.3	1.3	82.1	0.00	.94	12.38	6.57	12.58	2.00
6/23/77	40.6	19.4	30.0	0.0	56.	26.	41.	42.4	18.5	2.4	157.7	0.00	.73	10.51	5.95	12.38	2.00
6/30/77	41.7	14.4	28.1	0.0	57.	22.	40.	37.9	15.6	1.3	85.3	0.00	.81	11.10	6.06	10.51	2.00
7/ 7/77	36.7	12.8	24.7	0.0	82.	32.	57.	31.2	11.2	2.4	157.7	0.00	.93	12.12	6.24	11.10	2.00
7/14/77	37.8	21.1	29.4	0.0	64.	24.	44.	41.1	21.8	1.5	99.8	0.00	.67	9.79	5.76	12.12	2.00
7/21/77	39.4	16.1	27.8	0.0	56.	25.	41.	43.8	19.5	2.0	130.3	0.00	.84	11.08	6.28	9.79	2.00
7/28/77	42.8	18.3	30.6	0.0	56.	25.	41.	35.0	14.2	3.0	196.3	0.00	.62	9.04	5.16	11.08	2.00
8/ 4/77	38.3	15.0	26.7	0.0	100.	28.	64.	39.2	25.1	2.1	136.8	0.00	.81	10.39	5.47	9.04	2.00
8/11/77	38.3	18.9	28.6	0.0	100.	26.	63.	38.6	24.3	2.7	175.4	0.00	.49	7.75	4.73	10.39	2.00
8/18/77	36.7	20.0	28.3	0.0	78.	28.	52.	33.3	17.1	1.6	103.0	0.00	.91	10.71	6.16	7.75	2.00
8/25/77	37.8	13.9	25.8	0.0	66.	26.	46.	35.6	16.4	2.5	162.5	0.00	.85	9.91	5.24	10.71	2.00
9/ 1/77	38.3	15.6	26.9	0.0	100.	25.	63.	33.3	19.3	3.1	201.1	0.00	.96	10.34	5.22	9.91	2.00
9/ 8/77	37.8	13.9	25.8	0.0	76.	26.	51.	22.2	10.8	1.9	120.7	0.00	.82	8.99	4.78	10.34	2.00
9/15/77	29.4	8.9	19.2	0.0	89.	25.	57.	21.2	12.1	2.4	152.9	0.00	.83	8.67	4.09	8.99	2.00
9/22/77	29.4	7.8	18.6	0.0	76.	25.	51.	20.7	10.5	1.6	106.2	0.00	.93	9.28	4.28	8.67	2.00
9/29/77	31.1	5.0	18.1	0.0	76.	22.	49.	19.7	9.6	.9	57.9	0.00	.83	7.87	3.53	9.28	2.00
10/ 6/77	28.9	5.6	17.2	0.0	100.	22.	61.	23.4	14.3	1.6	101.4	0.00	.96	8.21	3.37	7.87	2.00
10/13/77	32.8	7.2	20.0	0.0	100.	26.	63.	19.3	12.2	1.5	98.1	0.00	.82	7.00	3.11	8.21	2.00
10/20/77	28.3	5.6	16.9	0.0	96.	27.	62.	15.6	9.6	3.9	255.8	0.00	.94	7.23	2.53	7.00	2.00
10/27/77	25.6	1.7	13.6	0.0	96.	25.	61.	14.5	8.8	1.7	107.8	0.00	.93	6.78	2.50	7.23	2.00
11/ 3/77	27.2	-2.2	12.5	0.0	66.	25.	46.	12.5	5.7	2.5	162.5	0.00	1.00	6.87	2.36	6.78	2.00
11/10/77	25.0	-4.0	10.3	0.0	68.	25.	46.	11.8	5.9	1.0	64.4	0.00	.64	4.78	1.53	6.87	2.00
11/17/77	23.9	-5.0	9.4	0.0	76.	36.	56.	12.3	6.9	1.3	82.1	0.00	1.00	6.00	1.53	4.78	2.00
11/24/77	20.6	-7.2	6.7	0.0	84.	35.	60.	12.8	7.7	2.7	175.4	0.00	1.00	6.21	1.77	6.00	2.00
12/ 1/77	23.9	-2.8	10.6	0.0	84.	35.	60.	11.2	7.7	1.9	122.3	0.00	.61	4.05	1.21	6.21	2.00
12/ 8/77	20.6	-3.3	8.6	0.0	100.	30.	65.	9.8	6.4	1.3	83.7	0.00	.61	3.91	1.07	4.05	2.00
12/15/77	21.7	-8.3	6.7	0.0	100.	30.	65.	10.6	6.9	1.0	64.4	0.00	.69	4.00	.98	3.91	2.00
12/22/77	15.6	0.0	7.8	0.0	100.	36.	68.	9.1	6.2				.20	2.41	1.02	4.00	2.00
12/29/77	12.8	-1.7	5.6										.47	3.40	1.10	2.69	2.00

APPENDIX C

FAO and Technical Release-21 Computer Program Listing

```
      PROGRAM FAO24(INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT,TAPE1)
C-----------------------------------------------------------------------
C   ABOVE DECLARATION OF FILE 1 IS AS PER CDC 6400.
C   FOR OTHER INSTALLATIONS THIS MAY NEED TO BE CHANGED.
C   FOR EXAMPLE IBM 360 NEED DECLARATION OF FILE BY SEPARATE D.D.CARD.
C   MAXIMUM LENGTH OF RECORD IS 22 AND NUMBER OF RECORDS ARE AS PER THE
C   NUMBER OF CARDS TO BE READ.
C   BLOCKING MAY BE CHANGED. BUT THIS MAY MAKE MINOR DIFFERENCE IN COST
C   LOCAL CONSULTANT OF GIVEN COMPUTER CAN GIVE BEST SUGGESTIONS.
C-----------------------------------------------------------------------
C-----------------------------------------------------------------------
C
C                THIS COMPUTER PROGRAM  WAS DEVELOPED
C                             BY
C         S.K.GUPTA, W.O.PRUITT, J.LONCZAK, AND K.K.TANJI
C         DEPARTMENT OF LAND, AIR, AND WATER RESOURCES
C         WATER SCIENCE AND ENGINEERING SECTION
C         UNIVERSITY OF CALIFORNIA,
C         DAVIS, CALIFORNIA  U.S.A.
C                             AND MODIFIED FOR
C                   THE UNIVERSITY OF NEVADA COMPUTING SYSTEM
C                                -CDC 6400-
C                                   BY
C                              ROBERT W FENNINGTON
C                          PLANT,SOIL AND WATER SCIENCE
C                            UNIVERSITY OF NEVADA-RENO
C                                   1977
C
C
C           THIS IS A COMPUTER PROGRAM BASED ON "CROP WATER
C         REQUIREMENTS" BY J. DOORENBOS AND W. O. PRUITT, IRRIGATION
C         AND DRAINAGE PAPER 24 (SECOND EDITION), WATER RESOURCES
C         DEVELOPMENT AND MANAGEMENT SERVICE, LAND AND WATER DEVELOPMENT
C         DIVISION, F.A.O. OF UNITED NATIONS, ROME.
C
C           IT ESTIMATES REFERENCE CROP EVAPOTRANSPIRATION (ETO)
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C         BY ANY OR ALL OF THE FOLLOWING METHODS:
C              1) BLANEY-CRIDDLE(FAO)
C              2) RADIATION(FAO)
C              3)  MODIFIED PENMAN(FAO) WITH C = 1.0
C              4) MODIFIED PENMAN(FAO)WITH CORRECTION
C              5) PAN EVAPORATION(FAO)
C
C-----------------------------------------------------------------------

      REAL MDAY
      REAL LAT, NACT, NTOL, NTBL1, NTBL2, NRATIO
      INTEGER RHFLAG, UFLAG
      INTEGER MONTH, DAY, YEAR, UNITN, ISTACT(2), ISNDAT(5)
      DIMENSION STA(5)
      REAL NNTOL(11,12), WK(5,14), RRAN(11,12), RRAS(11,12)
      DATA SIGMA / 2.0E-9 /

      FUNED(TDEW)= EXP(54.878919-(6790.4985/TDEW)-5.02808*ALOG(TDEW))
C     THE ABOVE VALUE OF SIGMA IS EQUIVALENT TO USING L=586 CAL/GM WATER
C     SINCE SIGMA=11.71*10E-8 CAL /CM.CM

C-----------------------------------------------------------------------
C     THIS PROGRAM DOES THE FOLLOWING
C              READS IN ALL INPUT DATA
C              CONVERTS THE DATA INTO METRIC UNITS
C              CALCULATES THE NEEDED MEANS
C              ADJUSTS THE WIND MEASUREMENTS TO 2 M HEIGHT.
C              ESTIMATES THE SOLAR RADIATION IF NOT GIVEN
C              CALLS THE SUBROUTINE BY WHICH THE ESTIMATION IS DESIRED.
C
C     LIST OF INPUT SYMBOLS
C              **********************************************************
C              ALT = STATION ALTITUDE
C              CASE = A OR B (SEE DETAILS IN CHAPTER 1.1)
C                   - REQUIRED ONLY IF PAN EVAPORATION ESTIMATE OF ETO
C                     VALUE IS DESIRED
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C          DAY = TWO DIGIT REPRESENTATION OF DAY (IE. 08)
C              = 00 IF MONTHLY DATA ARE GIVEN
C              - REQUIRED ON ALL DAILY AND MONTHLY DATA CARDS
C          ED = DAY"S ACTUAL VAPOR PRESSURE IF DATA ARE DAILY
C             = MEAN OF DAILY VP"S IF DATA ARE MONTHLY
C             - OPTIONAL BUT SUGGESTED FOR INCREASING ACCURACY
C          EPAN = DAY"S EVAPORATION FROM CLASS A PAN
C               = MEAN OF DAILY EVAP"S IF DATA ARE MONTHLY
C               - REQUIRED ONLY IF PAN EVAPORATION VALUE ARE DESIRED
C          FACTED = FACTOR FOR CONVERTING "ED" VALUES TO MILLIBARS
C                 = 1.0  IF ED DATA ARE IN TERMS OF MILLIBARS
C                 = 1.33 IF IF ED DATA ARE IN MILLIMETERS OF MERCURY
C                  = 33.78 IF ED DATA APE IN INCHES OF MERCURY
C          FACTEP = FACTOR FOR CONVERTING EPAN DATA INTO MM/DAY
C                 = 1 IF DATA ARE ALREADY IN MM/DAY
C                 = 25.4 IF DATA ARE IN IN/DAY
C          FACTRS = FACTOR FOR CONVERTING RS DATA INTO MM/DAY
C                 = 1 IF DATA ARE ALREADY IN MM/DAY
C                 = 0.017 IF DATA ARE IN CAL/DAY
C                 = 0.406 IF DATA ARE IN MEGA JOULES/M*M
C          FETCH = LENGTH OF UPWIND GREEN CROP FROM PAN FOR CASE A
C                = UPWIND DRY SURFACE FOR CASE B
C                - REQUIRED ONLY IF PAN EVAPORATION VALUE IS DESIRED
C          FUDAY  = FACTOR FOR CONVERTING DAY TIME WIND DATA
C                 =  1. 0 IF UDAY IS IN M/SEC
C                 =  0.447 IF UDAY IS IN MPH
C                 =  0.278 IF UDAY IS IN KM/HR
C                 =  0.515 IF UDAY IS IN KNOTS
C          FU24 = FACTOR FOR CONVERTING WIND DATA TO KM/DAY.
C               = 1.0 IF  U24 IS ALREADY IN KM/DAY
C               = 24 IF U24 IS IN KM/HR
C               = 38.6 IF U24 IS IN MPH
C               = 1.609 IF U24 IS IN MILES/DAY
C               = 44.47 IF U24 IS IN KNOTS
C          HEMIS = HEMISPHERE (N OR S)
C          LAT = STATION LATITUDE IN DEGREES N OR S (IS ALWAYS POS.)
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C      MONTH = TWO DIGIT REPRESENTATION OF MONTH (IE. 02)
C            - REQUIRED ON ALL DAILY AND MONTHLY DATA CARDS
C      NACT = HOURS OF BRIGHT SUNSHINE OR
C           = CLOUDINESS IN OKTAS OR TENTHS (SEE FACTN)
C      NFLAG  = FLAG FOR SUNSHINE OR NRATIO DATA
C             = 1 IF MEASURED OR RS GIVEN
C             = 2 IF ESTIMATED
C      ********************************************************
C      NBLANY = FLAG FOR BLANEY ET ESTIMATION.
C      NTR21 = FLAG FOR TECH. RELEASE-21 ET ESTIMATION
C      NCORPN = FLAG FOR CORRECTED PENMAN ET ESTIMATION.
C      NETPAN = FLAG FOR PAN EVAPORATION ET ESTIMATION.
C      NPENMN = FLAG FOR PENMAN ET ESTIMATION(C=1.0).
C      NRADIA = FLAG FOR RADIATION ET ESTIMATION.
C             = 1 IF DESIRED
C             = 0 IF NOT DESIRED
C      ********************************************************
C     NPRINT = 0 IF INPUT DATA IS NOT TO BE PRINTED.
C            = 1 IF ALONGWITH RESULTS,INPUT DATA AFTER CONVERSION
C                ARE TO BE PRINTED.
C            = 2 IF IN ADDITION TO ABOVE THE INPUT DATA AS READ
C                ARE TO BE PRINTED.
C                FOR FIRST RUN MAKE NPRINT=2.
C      NRATIO = RATIO OF ACTUAL SUNSHINE HOURS TO POSSIBLE
C      NREAD = FLAG FOR READING NEW VALUES OF URATIO,FETCH & CASE
C            = 0 OR BLANK IF NO CHANGES ARE DESIRED
C            = 1 IF ALL OR ANY ONE OF THE PARAMETERS ARE TO BE
C              CHANGED.
C      PMB = MEAN PRESSURE IN MILLIBARS FOR THE YEAR.
C      RHFLAG = FLAG FOR RELATIVE HUMIDITY DATA.
C             = 1 IF DATA ARE ACTUALLY COLLECTED DATA
C             = 2 IF DATA ARE ESTIMATED
C      RHMAX = MAX RELATIVE HUMIDITY FOR THE DAY
C            = MEAN OF DAILY MAX RH"S IF DATA ARE MONTHLY.
C            - REQUIRED ON ALL DAILY OR MONTHLY DATA CARDS
C              UNLESS ED OR TDEWPOINT ARE GIVEN.
```

```
C          IF NONE OF THREE IS AVAILABLE,ESTIMATE IS REQUIRED
C          IN CASE METHOD II  CALCULATION IS DESIRED.
C    RHMIN = MIN RELATIVE HUMIDITY FOR THE DAY.
C          = MEAN OF DAILY MIN RH"S IF DATA ARE MONTHLY.
C          - REQUIRED ON ALL DAILY OR MONTHLY DATA CARDS
C            UNLESS ED OR TDEWPOINT IS GIVEN.
C            IF NONE OF THREE IS AVAILABLE,ESTIMATE IS REQUIRED
C            IN CASE METHOD I CALCULATION IS DESIRED.
C    RS = SOLAR RADIATION IN TERMS OF EQUIVALENT EVAPORATION.
C    STA  = STATION NAME.
C    TDEW = DAY"S DEW POINT TEMPERATURE IF DATA ARE DAILY.
C         = MEAN OF DAILY DPT"S IF DATA ARE MONTHLY.
C         - OPTIONAL BUT SUGGESTED IF ED ARE NOT GIVEN.
C    TMAX = MAXIMUM TEMPERATURE FOR DAY IF DATA ARE DAILY.
C         = MEAN OF MAX DAILY. TEMPS IF DATA ARE MONTHLY
C         - REQUIRED ON ALL DAILY OR MONTHLY DATA CARDS.
C    TMIN = MINIMUM TEMPERATURE FOR DAY IF DATA ARE DAILY.
C         = MEAN OF MIN DAILY TEMPS IF DATA ARE MONTHLY.
C         - REQUIRED ON ALL DAILY OR MONTHLY DATA CARDS.
C    UDAY = MEAN DAYTIME WIND SPEED (IE. BETWEEN 0700 AND 1900)
C            IF NOT KNOWN AND U24 DATA ARE UNAVAILABLE,ESTIMATE
C            MUST BE GIVEN IN CASE USE OF METHOD I & II ARE
C            DESIRED.
C            IF U24 KNOWN, ESTIMATE OF UDAY/UNIGHT MUST BE MADE
C            OTHERWISE PROGRAM USES 2.0 FOR URATIO.
C    U24 =  24 HOUR WIND TOTAL.
C    UFLAG  = FLAG FOR WIND DATA.
C           = 1 IF U24 OR UDAY  IS MEASURED DATA.
C           = 2 IF U24 OR UDAY IS ESTIMATED.
C    UNITN = CONVERSION FLAG FOR SUNSHINE/CLOUDINESS DATA.
C          = 1 IF SUNSHINE DATA ARE GIVEN IN SUNSHINE HOURS
C                AS A DECIMAL
C          = 2 IF SUNSHINE DATA ARE GIVEN IN SUNSHINE HOURS
C                AS HOURS AND MINUTES SEPARATED BY A
C                DECIMAL POINT
C          = 3 IF SUNSHINE DATA ARE GIVEN INVERSELY IN TERMS
```

```
C                              OF OKTAS OF CLOUDINESS
C                     = 4 IF SUNSHINE DATA ARE GIVEN INVERSELY IN TERMS
C                              OF TENTHS OF CLOUDINESS
C                     = 5 IF NO SUNSHINE/CLOUDINESS DATA ARE GIVEN.
C                        NOTE:- IF RS DATA ARE GIVEN, PROGRAM WILL COMPUTE
C                        NRATIO. IF RS NOT AVAILABLE EITHER, ESTIMATE MUST
C                        THEN BE INCLUDED.
C               UNITT = FLAG FOR TEMPERATURE DATA
C                     = C IF INPUT DATA ARE IN DEGREES CELCIUS
C                     = F IF INPUT DATA ARE IN DEGREES FAHRENHEIT
C               URATIO= RATIO  OF UDAY/UNIGHT(IN CONSISTENT UNITS)
C                        IF NO BASIS FOR ESTIMATING, 2.0 VALUE IS ASSUMED
C               UHT = HEIGHT IN METERS FROM GROUND LEVEL AT WHICH THE
C                              WIND MEASUREMENTS WERE TAKEN.
C               YEAR = LAST TWO DIGITS OF YEAR (IE. 75)
/ALL /
C               ***************************************************
C  NOTE:- RHFLAG,UFLAG AND NFLAG ARE READ IN TO ELIMINATE USE OF PENMAN
C         OR RADIATION  IF SOME DATA ARE ROUGH ESTIMATE INSTEAD OF
C         MEASURED INFORMATION.
C          IF INTERPOLATED DATA ARE AVAILABLE FROM MAPS OF A REGION
C          SHOWING LINES OF EQUAL TDEW POINT, RH,  NRATIO ETC.A
C          FLAG = 1 MAY BE DESIRED EVEN THOUGH TEMPERATURE DATA
C          ALONE ARE MEASURED DATA.
C-----------------------------------------------------------------------
C
C***********************************************************************
C        PROGRAM CONSTANTS.
C***********************************************************************
      ISTACT(1)="ACTUALDATA"
      ISTACT(2)="ESTIMATED "

      ISNDAT(1)="SUNHRS"
      ISNDAT(2)="SUNDEC"
      ISNDAT(3)=" OKTAS"
      ISNDAT(4)="TENTHS"
```

```
      ISNDAT(5)="NODATA"
C*****************************************************************
C              THE CONSTANTS AND CONVERSION FACTORS OF THE GIVEN
C         STATION ARE READ AND PRINTED.
C*****************************************************************
    1 READ (5,500) STA, ALT, LAT, HEMIS, UHT, PMO
      IF(EOF(5))300,2
    2 READ (5,510) FU24,FUDAY,FACTED,FACTRS,FACTEP,UNITT,UNITN,RHFLAG,
     # UFLAG,NFLAG,NPRINT
      READ (5,520) NBLANY,NRADIA,NPENMN,NCORPN,NETPAN,NTR21

      IF(PMB.LE.0.0)PMB = 1013 - .1152*ALT + 5.44*10.E-6*ALT*ALT

C**** ABOVE EQ. IS DRIVED FROM LONG TIME MEAN PMB FOR NUMBER OF STATION
C     IN AFRICA(CLIMATE OF AFRICA,VOL 10,WORLD SURVEY OF CLIMATOLOGY)

      IEND = 0
      NCASE = 0
      PRINT 621
      PRINT 620
      PRINT 600, STA, ALT, LAT, HEMIS, UHT, PMB
      PRINT 620
      IF(NPRINT.EQ.0) GO TO 5
      PRINT 620
      PRINT 610, FU24, FUDAY, FACTED, FACTRS, FACTEP, UNITT, UNITN,
     1     ISTACT(RHFLAG),ISTACT(UFLAG),ISTACT(NFLAG)
      PRINT 620
C*****************************************************************
C              THIS 100 LOOP READS IN EACH DAILY OR MONTHLY DATA CARD
C         AND IMMEDIATELY PRINTS THE DATA BACK OUT.  IT THEN ADJUSTS,
C         CONVERTS, AND CALCULATES VARIOUS VALUES TO OBTAIN THE NEEDED
C         PROGRAM VALUES.  FINALLY IT WRITES THESE CONVERTED DATA OUT TO
C         DISK AND READS THE NEXT CARD.
C*****************************************************************
    5 DO 100 I=1,5000
      READ(5,530)SID,MONTH,DAY,YEAR,NREAD,TMAX,TMIN,TOEW,RHMAX,
```

```
     # RHMIN,ED,UDAY,U24,NACT,NRATIO,RS,RN,EPAN,URATIO
       IF(EOF(5))105,6
     6 IF(MONTH.EQ.0.AND.DAY.EQ.0)GO TO 105
       IF(NREAD.EQ.0)GO TO 10
C*************************************************************************
C          NREAD = 1 WHEN FETCH AND CASE HAS TO BE READ AGAIN
C*************************************************************************
       READ(5,540) FETCH,CASE
    10 IDAYYY= IDAYYY + 1
       EA=0.0
       IF(NPRINT.LT.2) GO TO 25
       IF (I.NE.1) GO TO 20
       PRINT 621
       PRINT 620
       PRINT 625
       PRINT 620
       PRINT 630, ISNDAT(UNITN)
    20 IF(NREAD.NE.0)PRINT 632,FETCH,CASE
       PRINT 634, MONTH,DAY,YEAR,TMAX,TMIN,TDEW,RHMAX,RHMIN,ED.UDAY.U24,
      #           NACT,NRATIO,RS,RN,EPAN,URATIO
C*************************************************************************
C              CALCULATING TMEAN AND RHMEAN, AND CONVERTING THE
C         TEMPERATURE DATA TO CELCIUS IF NECESSARY.
C*************************************************************************
    25 IF(RHMAX.GT.100.0.OR.RHMIN.GT.100.0)PRINT 624, RHMAX,RHMIN
       RHMEAN=(RHMAX+RHMIN)/2.0
       TMEAN=(TMAX+TMIN)/2.0
       IF (UNITT.EQ."C") GO TO 30
       TMAX = (TMAX-32.0) * 5.0/9.0
       TMIN = (TMIN-32.0) * 5.0/9.0
       TMEAN = (TMEAN-32.0) * 5.0/9.0
       IF (TDEW.NE.0.0) TDEW = (TDEW-32.0) * 5.0/9.0
    30 TK = TMEAN + 273.16
       IF(TDEW.NE.0.0)TKDEW = TDEW +  273.16
C*************************************************************************
C        ADJUSTING FOR MEASUREMENT HEIGHT IF IT IS OTHER THAN 2 METERS.
```

```
C*************************************************************************
      A = 0.17
      IF(UHT.LE.2.0) A = 0.22
      UHTCF = ((2.0/UHT)**A)
      UDAY = UDAY * UHTCF
      U24 = U24 * UHTCF
C*************************************************************************
C        CORRECTION FACTORS MULTIPLIED.
C*************************************************************************
      U24 = U24 * FU24
      IF(UDAY.EQ.0.0) GO TO 35
      UDAY = UDAY * FUDAY
   35 IF(U24.EQ.0.0.AND.UDAY.EQ.0.0) GO TO 40
      UNIGHT = 0.0
      IF(U24.NE.0.0.AND.UDAY.NE.0.0) UNIGHT = U24/43.2 - UDAY
      IF(UNIGHT.NE.0.0.AND.UDAY.NE.0.0.AND.URATIO.EQ.0.0)
     # URATIO = UDAY/UNIGHT

C*****IF NO URATIO DATA IS GIVEN OR POSSIBLE FROM DATA URATIO = 2.0

      IF(URATIO.EQ.0.0) URATIO = 2.0
      IF(U24.NE.0.0.AND.UDAY.EQ.0.0) UDAY=U24*URATIO/(43.2*(1+URATIO))
      IF(U24.EQ.0.0.AND.UDAY.NE.0.0) U24=43.2*UDAY*(1+1./URATIO)
C*************************************************************************
C        FROM GIVEN WIND DATA OTHER WIND DATA ARE ESTIMATED.
C*************************************************************************
   40 ED = ED * FACTED
      RS = RS * FACTRS
      EPAN = EPAN * FACTEP
C*************************************************************************
C        CALCULATION OF EA, AND ED IF NOT GIVEN.
C*************************************************************************
      EA = FUNED(TK)
      IF (TDEW.NE.0.0.AND.ED.EQ.0.0) ED = FUNED(TKDEW)
      IF(ED.EQ.0.0) ED = RHMEAN*EA/100.0
      TKMAX = TMAX + 273.16
```

```
      TKMIN = TMIN + 273.16
      EATMAX = FUNED(TKMAX)
      EATMIN = FUNED(TKMIN)
      IF(RHMIN.EQ.0.0.AND.TDEW.NE.0.0) RHMIN = 100.0*ED/EATMAX
      IF(RHMAX.EQ.0.0.AND.TDEW.NE.0.0) RHMAX = 100.0*ED/EATMIN
      IF(RHMAX.GT.100.0)RHMAX=100.0
      IF(RHMIN.GT.100.0)RHMIN=100.0
      IF(RHMEAN.EQ.0.0) RHMEAN =(RHMAX + RHMIN)*0.5
      IF (CASE.EQ."A") NCASE = 1
      IF (CASE.EQ."B") NCASE = 2
C*****************************************************************
C             THIS SECTION CONVERTS WHATEVER SUNSHINE/CLOUDINESS DATA
C       IS GIVEN (IF ANY) TO EITHER SUNSHINE HOURS OR NRATIO.  IF NONE
C       IS GIVEN, THEN NRATIO OR RS MUST BE GIVEN.
C*****************************************************************
      GO TO (60,45,50,55,65), UNITN
   45 NHRS=INT(NACT)
      NMINS=(NACT-NHRS) * 100.0
      NACT=NHRS + NMINS/60.0
      GO TO 60

   50 NRATIO = 0.95- 0.087*NACT - 0.003*NACT*NACT

C  ***  IF NACTUAL IS 8.0 MEANS FULL CLOUDINESS

      NACT=0.0
      GO TO 60

   55 NRATIO = 0.95 - 0.066*NACT - 0.0023*NACT*NACT
      NACT=0.0
C*****************************************************************
C             IF NRATIO IS ZERO , IT IS ESTIMATED FROM RS.
C       IN "NNTBL" BELOW, MONTH IS ON THE VERTICAL FROM 1 TO 12, AND
C       LATITUDE IS HORIZONTAL FROM 0 TO 50 DEGREES.
C*****************************************************************
      DATA NNTBL
```

```
     1 / 12.1,11.8,11.6,11.3,11.0,10.7,10.4,10.1, 9.6, 9.2, 8.5,
     2   12.1,11.9,11.8,11.6,11.5,11.3,11.1,11.0,10.7,10.4,10.1,
     3   12.1,12.0,12.0,12.0,12.0,12.0,12.0,11.9,11.9,11.9,11.8,
     4   12.1,12.2,12.3,12.5,12.6,12.7,12.9,13.1,13.3,13.5,13.8,
     5   12.1,12.3,12.6,12.8,13.1,13.3,13.6,14.0,14.4,14.8,15.4,
     6   12.1,12.4,12.7,13.0,13.3,13.7,14.0,14.5,15.0,15.6,16.3,
     7   12.1,12.3,12.6,12.9,13.2,13.5,13.9,14.3,14.7,15.3,15.9,
     8   12.1,12.3,12.4,12.6,12.8,13.0,13.2,13.5,13.7,14.1,14.5,
     9   12.1,12.1,12.1,12.2,12.3,12.3,12.4,12.4,12.5,12.6,12.7,
     A   12.1,12.0,11.8,11.8,11.7,11.6,11.5,11.3,11.2,11.0,10.8,
     B   12.1,11.9,11.6,11.4,11.2,10.9,10.6,10.3,10.0, 9.6, 9.1,
     C   12.1,11.8,11.5,11.2,10.9,10.6,10.2, 9.8, 9.3, 8.8, 8.1 /

  60 IF(NRATIO.NE.0.0) GO TO 65
     IF (RS.NE.0.0) GO TO 65
     IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
     LL=INT(LAT/5) * 5
     IF (LAT.GT.50) LL=50
     L1=LL/5 + 1
     L2=L1 + 1
     IF (L2.GT.11) L2=11
     FAC1=(LAT-LL)/5.0
     MONTH1 = MONTH
     MONTH2 = MONTH
     IF (DAY.GT.15) MONTH2=MOD(MONTH,12) + 1
     IF (DAY.LT.15.AND.DAY.NE.0) MONTH1=MOD(MONTH+10,12) + 1
     NTBL1=NNTBL(L1,MONTH1) + FAC1*(NNTBL(L2,MONTH1)-NNTBL(L1,MONTH1))
     NTBL2=NNTBL(L1,MONTH2) + FAC1*(NNTBL(L2,MONTH2)-NNTBL(L1,MONTH2))
     FAC=DAY - 15
     IF (FAC.LT.0.0) FAC=FAC + 30.0
     FAC2=FAC/30.0
     NTBL=NTBL1 + FAC2 * (NTBL2-NTBL1)
     NRATIO=NACT/NTBL
     IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
C*************************************************************
C            THIS SECTION CALCULATES A VALUE FOR RA IF IT IS NEEDED.
C
```

```
C         IN "RRAN" AND "RRAS" BELOW MONTH IS ON THE VERTICAL FROM
C         1 TO 12, AND LATITUDE IS HORIZONTAL FROM 0 TO 50.
C*****************************************************************
      DATA RRAN
     1 / 15.0,14.1,13.2,12.2,11.2,10.1, 8.9, 7.6, 6.4, 5.1, 3.8,
     2   15.5,14.9,14.3,13.5,12.7,11.7,10.7, 9.6, 8.5, 7.3, 6.1,
     3   15.7,15.6,15.3,14.9,14.4,13.7,13.0,12.2,11.3,10.3, 9.3,
     4   15.3,15.5,15.6,15.7,15.6,15.5,15.2,14.7,14.2,13.5,12.7,
     5   14.4,15.0,15.5,16.0,16.3,16.4,16.5,16.4,16.3,16.1,15.7,
     6   13.9,14.6,15.2,15.8,16.3,16.7,17.0,17.2,17.3,17.3,17.2,
     7   14.1,14.7,15.3,15.8,16.3,16.6,16.7,16.8,16.7,16.6,16.4,
     8   14.8,15.2,15.5,15.8,15.9,15.8,15.7,15.5,15.1,14.6,14.0,
     9   15.3,15.3,15.3,15.1,14.8,14.5,13.9,13.2,12.5,11.7,10.9,
     A   15.4,15.1,14.6,14.1,13.4,12.6,11.7,10.7, 9.6, 8.5, 7.2,
     B   15.1,14.4,13.6,12.7,11.7,10.6, 9.5, 8.2, 7.0, 5.6, 4.3,
     C   14.8,13.9,13.0,11.9,10.8, 9.5, 8.3, 7.0, 5.7, 4.3, 3.9 /

      DATA RRAS
     1 / 15.0,15.7,16.4,16.9,17.3,17.6,17.8,17.9,17.9,17.7,17.4,
     2   15.5,15.9,16.2,16.4,16.5,16.5,16.3,16.0,15.7,15.2,14.6,
     3   15.7,15.7,15.6,15.3,15.0,14.6,14.0,13.4,12.6,11.7,10.7,
     4   15.3,14.8,14.3,13.6,12.9,12.1,11.2,10.2, 9.2, 8.1, 7.0,
     5   14.4,13.7,12.9,12.0,11.0,10.0, 8.9, 7.8, 6.6, 5.4, 4.2,
     6   13.9,13.0,12.1,11.1,10.0, 8.9, 7.8, 6.6, 5.4, 4.2, 3.0,
     7   14.1,13.3,12.4,11.4,10.4, 9.3, 8.2, 7.1, 5.9, 4.7, 3.5,
     8   14.8,14.2,13.5,12.8,11.9,11.0,10.0, 9.0, 7.9, 6.7, 5.6,
     9   15.3,15.1,14.8,14.4,14.0,13.4,12.7,11.9,11.0,10.0, 8.8,
     A   15.4,15.7,15.9,15.9,15.8,15.6,15.2,14.8,14.2,13.6,12.8,
     B   15.1,15.7,16.2,16.7,17.0,17.2,17.2,17.1,17.0,16.7,16.4,
     C   14.8,15.6,16.3,16.9,17.4,17.7,18.0,18.2,18.3,18.3,18.1 /

  65 IF (NRATIO.NE.0.0.AND.RS.NE.0.0) GO TO 85
     LL=INT(LAT/5) * 5
     IF (LAT.GT.50.0) LL=50
     L1=LL/5 + 1
     L2=L1 + 1
```

```
      IF (L2.GT.11) L2=11
      FAC1=(LAT-LL)/5.0
      MONTH1 = MONTH
      MONTH2 = MONTH
      IF (DAY.LT.15.AND.DAY.NE.0) MONTH1=MOD(MONTH+10,12) + 1
      IF (DAY.GT.15) MONTH2=MOD(MONTH,12) + 1
      IF (HEMIS.EQ."S") GO TO 70
      RA1=RRAN(L1,MONTH1) + FAC1 * (RRAN(L2,MONTH1)-RRAN(L1,MONTH1))
      RA2=RRAN(L1,MONTH2) + FAC1 * (RRAN(L2,MONTH2)-RRAN(L1,MONTH2))
      GO TO 75
   70 RA1=RRAS(L1,MONTH1) + FAC1 * (RRAS(L2,MONTH1)-RRAS(L1,MONTH1))
      RA2=RRAS(L1,MONTH2) + FAC1 * (RRAS(L2,MONTH2)-RRAS(L1,MONTH2))
   75 FAC=DAY - 15
      IF (FAC.LT.0.0) FAC=FAC + 30.0
      FAC2=FAC/30.0
      RA=RA1 + FAC2 * (RA2-RA1)
C*************************************************************************
C              HERE NRATIO AND RS ARE CALCULATED IF NOT GIVEN OR
C         CALCULATED ABOVE
C*************************************************************************
      IF (NRATIO.EQ.0.0) NRATIO=2.0 * RS/RA - 0.5
      IF (NRATIO.GT.1.0) NRATIO=0.999
      IF(NRATIO.LT.0.0) NRATIO = 0.0
      IF (RS.EQ.0.0) RS=(0.25 + 0.5*NRATIO) * RA
      GO TO 85
C*************************************************************************
C         CALCULATION OF "W" USING PMB, EA, AND T.
C*************************************************************************
   85 GG=0.0006595 * PMB
      D=(EA/TK) * (6790.4985/TK - 5.02808)
      W=D/(D+GG)
      IF(RN.NE.0.0) GO TO 95
      TK=TMEAN + 273.16
      FT=SIGMA * (TK**4)
      FED=0.34 - 0.044*SQRT(ED)
      FNN=0.1 + 0.9*NRATIO
```

```
      RN=0.75*RS - FT*FED*FNN

C*****************************************************************
C        HERE THE CONVERTED DATA ARE WRITTEN ON  DISK.
C*****************************************************************
   95 WRITE (1) MONTH,DAY,YEAR,TMAX,TMIN,TMEAN,RHMAX,RHMIN,RHMEAN,RN,
     #          EA,ED,UDAY,U24,NACT,NRATIO,RS,EPAN,CASE,FETCH,URATIO,W,
     #          NREAD,TDEW
C*****************************************************************
C        END OF 100 LOOP.
C*****************************************************************

  100 CONTINUE

C*****************************************************************
C              THIS SECTION READS THE CONVERTED DATA BACK OFF DISK AND
C        PRINTS IT OUT FOR COMPARISON.
C*****************************************************************
  105 NDATA=I-1
      REWIND 1
      IF(NPRINT.EQ.0) GO TO 130

      DO 120 I=1,NDATA
      READ (1)MONTH,DAY,YEAR,TMAX,TMIN,TMEAN,RHMAX,RHMIN,RHMEAN,
     1         RN,EA,ED,UDAY,U24,NACT,NRATIO,RS,EPAN,CASE,FETCH,URATIO,W,
     2         NREAD,TDEW
      IF(EOF(1))125,106
  106 IF (I.NE.1) GO TO 110
      IF(NDATA.GT.4)PRINT 621
      PRINT 640,STA,YEAR
      PRINT 620
      PRINT 631
  110 IF(NREAD.NE.0) PRINT 632,FETCH,CASE
      PRINT 635,MONTH,DAY,YEAR,TMAX,TMIN,TMEAN,TDEW,RHMAX,RHMIN,RHMEAN,
     #         EA,ED,UDAY,U24,NACT,NRATIO,RS,RN,EPAN,URATIO
  120 CONTINUE
```

```
C*****************************************************************
C              BELOW THIS POINT THE PROGRAM AGAIN READS THE CONVERTED
C         DATA OFF DISK AND THEN ESTIMATES ET BY THE DESIRED METHODS.
C         MONTHLY AVERAGING IS ALSO DONE.
C*****************************************************************
  125 REWIND 1

  130 I = 0
      GO TO 145
  135 DO 200 I=1,NDATA
      READ(1)MONTH,DAY,YEAR,TMAX,TMIN,TMEAN,RHMAX,RHMIN,RHMEAN,
     #       RN,EA,ED,UDAY,U24,NACT,NRATIO,RS,EPAN,CASE,FETCH,URATIO,W
      IF(EOF(1))205,136
  136 IF (I.EQ.1) GO TO 150
      IF (DAY.EQ.0) GO TO 155
       IF(MONTH.EQ.MO) GO TO 155
  140 SUMET1 = SUMET1/MDAY
      SUMET2 = SUMET2/MDAY
      SUMET3 = SUMET3/MDAY
      SUMETC = SUMETC/MDAY
      SUMET4 = SUMET4/MDAY
      SUMET5 = SUMET5/MDAY
      PRINT 620
      PRINT 650, SUMET1, SUMET2, SUMET3, SUMETC, SUMET4, SUMET5
      PRINT 620
      SUMET1=SUMET1*.03937
      SUMET2=SUMET2*.03937
      SUMET3=SUMET3*.03937
      SUMETC=SUMETC*.03937
      SUMET4=SUMET4*.03937
      SUMET5 = SUMET5 * .03937
      PRINT 652, SUMET1, SUMET2, SUMET3, SUMETC, SUMET4, SUMET5
      PRINT 620
      BOZO=0.0
      IYR=(YEAR/4)*4
      IF(MO.EQ.1) BOZO=31.0
```

```
      IF(MO.EQ.2.AND.IYR.EQ.YEAR) BOZO=29.0
      IF(MO.EQ.2.AND.IYR.NE.YEAR) BOZO=28.0
      IF(MO.EQ.3) BOZO=31.0
      IF(MO.EQ.4) BOZO=30.0
      IF(MO.EQ.5) BOZO=31.0
      IF(MO.EQ.6) BOZO=30.0
      IF(MO.EQ.7) BOZO=31.0
      IF(MO.EQ.8) BOZO=31.0
      IF(MO.EQ.9) BOZO=30.0
      IF(MO.EQ.10) BOZO=31.0
      IF(MO.EQ.11) BOZO=30.0
      IF(MO.EQ.12) BOZO=31.0
      SUMET1=SUMET1*BOZO
      SUMET2=SUMET2*BOZO
      SUMET3=SUMET3*BOZO
      SUMETC=SUMETC*BOZO
      SUMET4=SUMET4*BOZO
      SUMET5 = SUMET5*BOZO
      PRINT 653, SUMET1, SUMET2, SUMET3, SUMETC, SUMET4, SUMET5
      PRINT 620
      PRINT 654, BOZO
  145 SUMET1 = 0.0
      SUMET2 = 0.0
      SUMET3 = 0.0
      SUMETC = 0.0
      SUMET4 = 0.0
      SUMET5 = 0.0
      MDAY   = 0
      IF(I.EQ.0) GO TO 135
      IF(IEND.EQ.1)GO TO.1
  150 IF(NDATA.GT.4)PRINT 621
      PRINT 620
      PRINT 645, MONTH,YEAR
      PRINT 620
      PRINT 655
```

```
 155 IF (NBLANY.NE.0) CALL BLANEY (LAT,HEMIS,MONTH,DAY,TMEAN,RHMIN,
                                   NRATIO,UDAY,ET1)
     #
     IF(NTR21.NE.0) CALL TR21 (LAT,HEMIS,MONTH,DAY,TMEAN,ET5)
     IF (NRADIA.NE.0.AND.NFLAG.EQ.1)
                      CALL RADIAT (ALT,UDAY,W,RS,RHMEAN,TMEAN,ET2)
     #
     IF(RHFLAG.EQ.2.OR.NFLAG.EQ.2) GO TO 160
     IF (NPENMN.NE.0.OR.NCORPN.NE.0)
                    CALL PENMAN (W,TMEAN,EA,ED,U24,RS,NRATIO,ET3,RN)
     #
     IF (NCORPN.NE.0) CALL CORPEN (UDAY,U24,URATIO,RHMAX,RS,ET3,ET3C)
 160 IF(EPAN.EQ.0.0.OR.NCASE.EQ.0.OR.FETCH.EQ.0.0) GO TO 165
     IF(NETPAN.NE.0) CALL ETPAN(EPAN,U24,RHMEAN,FETCH,NCASE,ET4)

 165 SUMET1 = SUMET1 + ET1
     SUMET2 = SUMET2 + ET2
     SUMET3 = SUMET3 + ET3
     SUMETC = SUMETC + ET3C
     SUMET4 = SUMET4 + ET4
     SUMET5 = SUMET5+ET5
     PRINT 648, MONTH,DAY,YEAR,ET1,ET2,ET3,ET3C,ET4,ET5
     MDAY = MDAY   + 1
     MO = MONTH
 200 CONTINUE

 205 REWIND 1
     IF(MDAY.GT.1)IEND = 1
     IF(IEND.EQ.1) GO TO 140
      GO TO 1
C-------------------------------------------------------------------
C     READ FORMATS
C-------------------------------------------------------------------
 500  FORMAT (5A6,2F5.0,A1,9X,2F5.0)
 510  FORMAT (5F5.0,A1,9X,5(1X,I1))
 520  FORMAT(6(4X,I1))
 530  FORMAT(A3,3I2,I1,14F5.0)
 540  FORMAT(F10.0,A1)
C*******************************************************************
```

```
C         PRINT FORMATS
C*************************************************************************
 600  FORMAT (5X,"STATION = ",5A6,//,5X,"ALTITUDE IN METERS =",F9.1,//,
     #         5X,"LATITIDE IN DEGREES =",F9.1,//,
     #         5X,"HEMISPHERE = ",A1,//,
     #         5X,"HEIGHT OF WIND MEASUREMENT IN METERS =",F9.2,//,
     #         5X,"MEAN PRESSURE FOR THE YEAR IN MILLIBARS =",F9.1)
 610  FORMAT (5X,"FACTOR FOR CONVERTING 24HR WIND TO KM/DAY =",F9.3//,
     #         5X,"FACTOR FOR CONVERTING DAYTIME WIND TO M/SEC =",F9.3//,
     #         5X,"FACTOR FOR CONVERTING ED DATA TO MILLIBARS =",F9.3,//,
     #         5X,"FACTOR FOR CONVERTING RS DATA TO MM/DAY =",F9.3.//,
     #         5X,"FACTOR FOR CONVERTING EPAN DATA TO MM/DAY =",F9. 3,//,
     #         5X,"SUNSHINE/CLOUDINESS FLAG =",I5,//,
     #         5X,"RELATIVE HUMIDITY DATA =  ",A10//,
     #         5X,"WIND DATA =  ",A10//,
     #         5X,"SUNSHINE DATA =  ",A10)
 620  FORMAT (1H0,120("-")/)
 621  FORMAT (1H1,//)
 624  FORMAT(//" ERROR IN RH ",F10.2," =RHMAX AND RHMIN =",F10.2//)
 625  FORMAT (5X,"CLIMATOLOGICAL DATA AS READ IN WITHOUT CONVERSION")
 630  FORMAT (1H ,"DATE (M/D/Y)     TMAX   TMIN   TDEW   RHMAX   RHMIN",
     #         "    ED    UDAY    U24    ",A6,"   NRATIO   SOLRAD    RN ",
     #        "   EPAN      URATIO"/)
 631  FORMAT (1H ,"DATE (MDY)  TMAX  TMIN TMEAN  TDEW  RHMAX  RHMIN",
     #         " RHMEAN   EA    ED   UDAY   U24 SUNHRS NRATIO SOLRAD",
     #         "   RN     EPAN   URATIO  "/)
 632  FORMAT("  VALUES OF FETCH ",F8.2,",CASE ",A1)
 634  FORMAT(1H,I4,2("/",I2),3X,3F7.1,2(F7.0,1X),3F7.1,F8.2,F9.2,F9.2,
     #         F8.2,F8.2,F10.2)
 635  FORMAT(1H,I3,2("/",I2),1X,4F6.1,3(F6.0,1X),4F6.1,3(F6.2,1X),F6.2,
     #         F8.2,F10.2)
 640  FORMAT(1X,"TABLE    CLIMATOLOGICAL DATA FOR ",5A6,3X,"19",I2,/)
 645  FORMAT(" RESULT OF ET ESTIMATION BY VARIOUS METHODS FOR MONTH",I2,
     #         ",19",I2,/)
 646  FORMAT (/,1H ,130("*"),/)
```

```
 648  FORMAT(1H,2X,I2,"/",I2,"/19",I2,6F18.3)
 650  FORMAT(/," MONTH AVE",16X,6(F7.3,10X),/)
 652  FORMAT(/," MONTH AVE (IN)",11X,6(F7.3,10X),/)
 653  FORMAT(/," MONTHLY TOTAL(IN)",7X,6(F7.3,10X),/)
 654  FORMAT(/," BOZO= ",F8.3)
 655  FORMAT (1HO," MONTH/DAY/YEAR",9X,"BLANEY",11X,"RADIATION",10X,
     #         "PENMAN",10X,"CORR. PEN.",11X,"ETPAN",13X,"TR21"//)
C*************************************************************************
C         PROGRAM END
C*************************************************************************
  300 STOP
      END
```

```
      SUBROUTINE BLANEY (LAT,HEMIS,MONTH,DAY,TMEAN,RHMIN,NRATIO,
     #                   UDAY,ET1)
      DIMENSION AA(3,3), BB(6,6,6), C(2,2), D(2), PP(11,12)
      REAL NRATIO, LAT
C*****************************************************************
C        THIS SECTION INTERPOLATES "F".
C*****************************************************************
      DATA PP
     1 / .267,.264,.261,.257,.252,.246,.239,.231,.220,.209,.195,
     2   .269,.268,.266,.264,.261,.257,.253,.248,.243,.236,.228,
     3   .269,.269,.269,.269,.269,.269,.268,.268,.268,.267,.266,
     4   .269,.270,.272,.275,.278,.282,.286,.291,.297,.303,.310,
     5   .271,.273,.276,.281,.287,.294,.303,.312,.322,.334,.346,
     6   .274,.280,.285,.291,.298,.307,.316,.328,.341,.355,.371,
     7   .275,.281,.287,.293,.299,.305,.313,.321,.330,.341,.354,
     8   .274,.278,.282,.287,.291,.295,.300,.304,.309,.315,.322,
     9   .271,.277,.280,.281,.281,.281,.281,.281,.281,.281,.281,
     A   .270,.269,.268,.267,.264,.261,.258,.254,.250,.245,.240,
     B   .269,.267,.264,.260,.254,.247,.240,.231,.222,.211,.200,
     C   .268,.266,.262,.257,.250,.242,.232,.221,.209,.195,.180 /

      IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
      LL=INT(LAT/5) * 5
      IF (LAT.GT.50) LL=50
      L1=LL/5 + 1
      L2 = L1 + 1
      IF (L2.GT.11) L2=11
      FAC=(LAT-LL)/5.0
      MONTH1=MONTH
      MONTH2=MONTH
      IF (DAY.GT.15 ) MONTH2=MOD(MONTH,12) + 1
      IF (DAY.LT.15.AND.DAY.NE.0) MONTH1=MOD(MONTH+10,12) + 1
      P1=PP(L1,MONTH1) + FAC * (PP(L2,MONTH1)-PP(L1,MONTH1))
      P2=PP(L1,MONTH2) + FAC * (PP(L2,MONTH2)-PP(L1,MONTH2))
```

```
      IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
      FAC=DAY - 15
      IF (FAC.LT.0.0) FAC=FAC+30.0
      FAC2=FAC/30.0
      P=P1 + FAC2 * (P2-P1)

      F=P*(0.46*TMEAN + 8.13)

C*****************************************************************
C       THIS SECTION INTERPOLATES ET1 USING A, B, AND F.
C*****************************************************************

      DATA BB/.84,.8,.74,.64,.52,.38,1.03,.95,.87,.76,.63,.48,1.22,
     21.10,1.01,.88,.74,.57,1.38,1.24,1.13,.99,.85,.66,1.54,1.37,1.25,
     31.09,.94,.75,1.68,1.5,1.36,1.18,1.04,.84,.97,.9,.81,.68,.54,.4,
     41.19,1.08,.96,.84,.66,.5,1.41,1.26,1.11,.97,.77,.6,1.6,1.42,1.25,
     51.09,.89,.7,1.79,1.59,1.39,1.21,1.01,.79,1.98,1.74,1.52,1.31,1.11,
     6.89,1.08,.98,.87,.72,.56,.42,1.33,1.18,1.03,.87,.69,.52,1.56,1.38,
     71.19,1.02,.82,.62,1.78,1.56,1.34,1.15,.94,.73,2.,1.74,1.5,1.28,
     91.05,.83,2.19,1.9,1.64,1.39,1.16,.92,1.18,1.06,.92,.74,.58,.43,
     91.44,1.27,1.1,.91,.72,.54,1.7,1.48,1.27,1.06,.85,.64,1.94,1.67,
     A1.44,1.21,.97,.75,2.18,1.86,1.59,1.34,1.09,.85,2.39,2.03,1.74,
     B1.46,1.2,.95,1.26,1.11,.96,.76,.6,.44,1.52,1.34,1.14,.93,.74,.55,
     C1.79,1.56,1.32,1.1,.87,.66,2.05,1.76,1.49,1.25,1.,.77,2.3,1.96,
     D1.66,1.39,1.12,.87,2.54,2.14,1.82,1.52,1.24,.98,1.29,1.15,.98,.78,
     E.61,.45,1.58,1.38,1.17,.96,.75,.56,1.86,1.61,1.36,1.13,.89,.68,
     F2.13,1.83,1.54,1.28,1.03,.79,2.39,2.03,1.71,1.43,1.15,.89,2.63,
     G2.22,1.86,1.56,1.27,1./

      X=PHMIN
      Y=NRATIO
      Z=UDAY

      I1=INT(X/20.) + 1
      I2=I1 + 1
      IF (I2.GT.6) I2=6
```

```
      J1=INT(Y/0.2) + 1
      J2=J1 + 1
      IF (J2.GT.6) J2=6
      K1=INT(Z/2) + 1
      K2=K1 + 1
      IF(K2.GT.6) K2=6
      IF(K1.GT.6) K1 =6
      X1=(I1-1) * 20
      X2=(I2-1) * 20
      Y1=(J1-1) * 0.2
      Y2=(J2-1) * 0.2
      Z1=(K1-1) * 2
      Z2 = (K2-1) * 2

      FACX=0.0
      FACY = 0.0
      FACZ = 0.0

      IF (K1.NE.K2) FACZ=(Z-Z1)/(Z2-Z1)
      C(1,1)=BB(I1,J1,K1) + FACZ * (BB(I1,J1,K2)-BB(I1,J1,K1))
      C(1,2)=BB(I1,J2,K1) + FACZ * (BB(I1,J2,K2)-BB(I1,J2,K1))
      C(2,1)=BB(I2,J1,K1) + FACZ * (BB(I2,J1,K2)-BB(I2,J1,K1))
      C(2,2)=BB(I2,J2,K1) + FACZ * (BB(I2,J2,K2)-BB(I2,J2,K1))

      IF (J1.NE.J2) FACY=(Y-Y1)/(Y2-Y1)
      IF (I1.NE.I2) FACX=(X-X1)/(X2-X1)
      D(1)=C(1,1) + FACY * (C(1,2)-C(1,1))
      D(2)=C(2,1) + FACY * (C(2,2)-C(2,1))
      BP=D(1) + FACX * (D(2)-D(1))
      AP=0.0043*X - Y - 1.41

      ET1=AP + BP*F
      RETURN
      END
```

```
      SUBROUTINE TR21 (LAT,HEMIS,MONTH,DAY,TMEAN,ET5)
      REAL LAT,KC,KKC,K
      DIMENSION PP(11,12),KC(12)
C*****************************************************************
C        THIS SECTION INTERPOLATES "F".
C*****************************************************************
      DATA PP
     1 / .267,.264,.261,.257,.252,.246,.239,.231,.220,.209,.195,
     2   .269,.268,.266,.264,.261,.257,.253,.248,.243,.236,.228,
     3   .269,.269,.269,.269,.269,.269,.268,.268,.268,.267,.266,
     4   .269,.270,.272,.275,.278,.282,.286,.291,.297,.303,.310,
     5   .271,.273,.276,.281,.287,.294,.303,.312,.322,.334,.346,
     6   .274,.280,.285,.291,.298,.307,.316,.328,.341,.355,.371,
     7   .275,.281,.287,.293,.299,.305,.313,.321,.330,.341,.354,
     8   .274,.278,.282,.287,.291,.295,.300,.304,.309,.315,.322,
     9   .271,.277,.280,.281,.281,.281,.281,.281,.281,.281,.281,
     A   .270,.269,.268,.267,.264,.261,.258,.254,.250,.245,.240,
     B   .269,.267,.264,.260,.254,.247,.240,.231,.222,.211,.200,
     C   .268,.266,.262,.257,.250,.242,.232,.221,.209,.195,.180 /

      IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
      LL=INT(LAT/5) * 5
      IF (LAT.GT.50) LL=50
      L1=LL/5 + 1
      L2 = L1 + 1
      IF (L2.GT.11) L2=11
      FAC=(LAT-LL)/5.0
      MONTH1=MONTH
      MONTH2=MONTH
      IF (DAY.GT.15 ) MONTH2=MOD(MONTH,12) + 1
      IF (DAY.LT.15.AND.DAY.NE.0) MONTH1=MOD(MONTH+10,12) + 1
      P1=PP(L1,MONTH1) + FAC * (PP(L2,MONTH1)-PP(L1,MONTH1))
      P2=PP(L1,MONTH2) + FAC * (PP(L2,MONTH2)-PP(L1,MONTH2))
      IF (HEMIS.EQ."S") MONTH=MOD(MONTH+5,12) + 1
```

```
      FAC=DAY - 15
      IF (FAC.LT.0.0) FAC=FAC+30.0
      FAC2=FAC/30.0
      P=P1 + FAC2 * (P2-P1)
      FTMEAN=(1.8*TMEAN) + 32.0

      F= (P*FTMEAN)/100.0

C*****************************************************************
C     THIS SECTION INTERPOLATES "K"
C*****************************************************************
      DATA KC/ 0.63,0.73,0.86,0.99,1.08,1.13,
     1         1.11,1.06,0.99,0.91,0.78,0.64/

      KKC= KC(MONTH)
      K= ((0.0173*FTMEAN)-0.314) * KKC
      U = K*F

      ET5 = U*25.4

      RETURN
      END
```

```
      SUBROUTINE RADIAT (ALT,UDAY,W,RS,RHMEAN,TMEAN,ET2)
      DIMENSION BB(6,6)
      REAL INT2D
C*************************************************************************
C        THIS SUBROUTINE CALCULATES AN ET VALUE BY THE RADIATION METHOD.
C*************************************************************************

      A=-0.3

C*************************************************************************
C              INTERPOLATION OF "D".
C         IN "BB" BELOW, UDAY IS ON THE VERTICAL FROM 0.0 TO 10.0
C         AND RHMEAN IS HORIZONTAL FROM 0 TO 100.
C*************************************************************************

      DATA BB / 1.06, 1.15, 1.23, 1.29, 1.34, 1.39,
     2          1.02, 1.11, 1.18, 1.24, 1.28, 1.32,
     3          0.95, 1.04, 1.10, 1.15, 1.19, 1.23,
     4          0.87, 0.94, 0.99, 1.03, 1.07, 1.10,
     5          0.76, 0.81, 0.85, 0.89, 0.92, 0.94,
     6          0.64, 0.67, 0.70, 0.73, 0.75, 0.77/

      X=UDAY
      Y = RHMEAN

      I1=INT(X/2) + 1
      I2 = I1 + 1
      IF (I2.GT.6) I2=6
      IF(I1.GT.6) I1 = 6
      J1=INT(Y/20) + 1
      J2 = J1 + 1
      IF (J2.GT.6) J2=6
      X1=(I1-1) * 2
      X2 =(I2-1) * 2
```

```
Y1=(J1-1) * 20
Y2 = (J2-1) * 20

B=INT2D (I1,I2,J1,J2,X,Y,X1,X2,Y1,Y2,BB,6)


ET2=A + B*W*RS
RETURN
END
```

```
      SUBROUTINE PENMAN (W,TMEAN,EA,ED,U24,RS,NRATIO,ET3,RN)
      REAL NRATIO

C*************************************************************************
C         THIS SUBROUTINE CALCULATES THE UNCORRECTED PENMAN VALUE.
C*************************************************************************


      U2=U24
      FU=0.27*(1.0+U2/100.0)
      ET3=W*RN + (1.0-W)*FU*(EA-ED)
      RETURN
      END
```

```
      SUBROUTINE CORPEN (UDAY,U24,URATIO,RHMAX,RS,ET3,ET3C)
      DIMENSION CC1(4,4,3),CC2(4,4,3),CC3(4,4,3),CC4(4,4,3),
     1T1(2,2,2),T2(2,2),T3(2)
      REAL NRATIO

C*****************************************************************
C            THIS SUBROUTINE INTERPOLATES THE PENMAN CORRECTION FACTOR
C       "C", AND CALCULATES THE CORRECTED PENMAN VALUE.
C*****************************************************************

      DATA CC1/.86,.9,1.,1.,.64,.71,.82,.89,.43,.53,.68,.79,.27,.41,.59,
     2.78,.96,.98,1.05,1.05,.78,.86,.94,.99,.62,.7,.84,.93,.5,.6,.75,
     3.87,1.02,1.06,1.1,1.1,.85,.92,1.01,1.05,.72,.82,.95,1.,.62,.72,
     4.87,.96/
      DATA CC2/.86,.9,1.,1.,.69,.76,.85,.92,.53,.61,.74,.84,.37,.48,.65,
     2.76,.96,.98,1.05,1.05,.83,.91,.99,1.05,.7,.8,.94,1.02,.59,.7,.84,
     3.95,1.02,1.06,1.1,1.1,.89,.98,1.1,1.14,.79,.92,1.05,1.12,.71,.81,
     4.98,1.06/
      DATA CC3/.86,.9,1.,1.,.76,.81,.88,.94,.61,.68,.81,.88,.46,.56,.72,
     2.82,.96,.98,1.05,1.05,.87,.96,1.06,1.12,.77,.88,1.02,1.1,.67,.79,
     3.88,1.05,1.02,1.06,1.1,1.1,.94,1.04,1.18,1.28,.86,1.01,1.15,1.22,
     4.78,.92,1.06,1.18/
      DATA CC4/.86,.9,1.,1.,.79,.84,.92,.97,.68,.77,.87,.93,.55,.65,.78,
     2.9,.96,.98,1.05,1.05,.92,1.,1.11,1.19,.85,.96,1.11,1.19,.76,.88,
     31.02,1.14,1.02,1.06,1.1,1.1,.99,1.1,1.27,1.32,.94,1.1,1.26,1.33,
     4.88,1.01,1.16,1.27/

      W=RS
      X=UDAY
      Y=RHMAX
      Z=URATIO

      II=INT(W/3) * 3
      IF (II.EQ.0) II=3
```

```
      I1=II/3
      I2 = I1 + 1
      IF (I2.EQ.5) I2=4
      IF(I1.GT.4) I1 = 4
      IF(I1.EQ.0) I1 = 1
      FAC1=(W-II)/3.0
      JJ=INT(X/3) * 3
      IF (JJ.GT.9) JJ=9
      J1=JJ/3 + 1
      J2 = J1 + 1
      IF (J2.EQ.5) J2=4
      FAC2=(X-JJ)/3.0
      KK=INT(Y/30) * 30
      IF (KK.EQ.0) KK=30
      K1=KK/30
      K2 = K1 + 1
      IF (K2.EQ.4) K2=3
      FAC3=(Y-KK)/30.0
      LL=INT(Z)
      IF (LL.EQ.0) LL=1
      L1=LL
      L2 = L1 + 1
      IF (L2.EQ.5) L2=4
      IF(L1.GT.4) L1=4
      FAC4=(Z-LL)

      GO TO (10,20,30,40),L1
   10 CC111=CC1(I1,J1,K1)
      CC112=CC1(I1,J1,K2)
      CC121=CC1(I1,J2,K1)
      CC122=CC1(I1,J2,K2)
      CC211=CC1(I2,J1,K1)
      CC212=CC1(I2,J1,K2)
      CC221=CC1(I2,J2,K1)
      CC222=CC1(I2,J2,K2)
      CP111=CC2(I1,J1,K1)
```

```
      CP112=CC2(I1,J1,K2)
      CP121=CC2(I1,J2,K1)
      CP122=CC2(I1,J2,K2)
      CP211=CC2(I2,J1,K1)
      CP212=CC2(I2,J1,K2)
      CP221=CC2(I2,J2,K1)
      CP222=CC2(I2,J2,K2)
      GO TO 50
   20 CC111=CC2(I1,J1,K1)
      CC112=CC2(I1,J1,K2)
      CC121=CC2(I1,J2,K1)
      CC122=CC2(I1,J2,K2)
      CC211=CC2(I2,J1,K1)
      CC212=CC2(I2,J1,K2)
      CC221=CC2(I2,J2,K1)
      CC222=CC2(I2,J2,K2)
      CP111=CC3(I1,J1,K1)
      CP112=CC3(I1,J1,K2)
      CP121=CC3(I1,J2,K1)
      CP122=CC3(I1,J2,K2)
      CP211=CC3(I2,J1,K1)
      CP212=CC3(I2,J1,K2)
      CP221=CC3(I2,J2,K1)
      CP222=CC3(I2,J2,K2)
      GO TO 50
   30 CC111=CC3(I1,J1,K1)
      CC112=CC3(I1,J1,K2)
      CC121=CC3(I1,J2,K1)
      CC122=CC3(I1,J2,K2)
      CC211=CC3(I2,J1,K1)
      CC212=CC3(I2,J1,K2)
      CC221=CC3(I2,J2,K1)
      CC222=CC3(I2,J2,K2)
      CP111=CC4(I1,J1,K1)
      CP112=CC4(I1,J1,K2)
      CP121=CC4(I1,J2,K1)
```

```
      CP122=CC4(I1,J2,K2)
      CP211=CC4(I2,J1,K1)
      CP212=CC4(I2,J1,K2)
      CP221=CC4(I2,J2,K1)
      CP222=CC4(I2,J2,K2)
      GO TO 50
   40 WRITE(6,888) L1
  888 FORMAT(* INCORRECT VALUE FOR L1 *,I3)
   50 T1(1,1,1)=CC111+FAC4*(CP111-CC111)
      T1(1,1,2)=CC112+FAC4*(CP112-CC112)
      T1(1,2,1)=CC121+FAC4*(CP121-CC121)
      T1(1,2,2)=CC122+FAC4*(CP122-CC122)
      T1(2,1,1)=CC211+FAC4*(CP211-CC211)
      T1(2,1,2)=CC212+FAC4*(CP212-CC212)
      T1(2,2,1)=CC221+FAC4*(CP221-CC221)
      T1(2,2,2)=CC222+FAC4*(CP222-CC222)
      T2(1,1)=T1(1,1,1) + FAC3*(T1(1,1,2)-T1(1,1,1))
      T2(1,2)=T1(1,2,1) + FAC3*(T1(1,2,2)-T1(1,2,1))
      T2(2,1)=T1(2,1,1) + FAC3*(T1(2,1,2)-T1(2,1,1))
      T2(2,2)=T1(2,2,1) + FAC3*(T1(2,2,2)-T1(2,2,1))
      T3(1)=T2(1,1) + FAC2*(T2(1,2)-T2(1,1))
      T3(2)=T2(2,1) + FAC2*(T2(2,2)-T2(2,1))
      T4=T3(1) + FAC1*(T3(2)-T3(1))
      C=T4

      ET3C=ET3*C
      RETURN
      END
```

```
      SUBROUTINE ETPAN (EPAN,U24,RHMEAN,FETCH,NCASE,ET4)
      DIMENSION C(2,2), D(2)
      REAL KP,KKP1(3,4,2),KKP2(3,4,2),KKP3(3,4,2),KKP4(3,4,2)
      REAL KP111,KP112,KP121,KP122,KP211,KP212,KP221,KP222
C*****************************************************************
C*****************************************************************
      DATA KKP1/.55,.65,.75,.5,.6,.65,.45,.5,.6,.4,.45,.5,.7,.8,.85,.65,
     1.75,.8,.6,.65,.7,.5,.6,.65/
      DATA KKP2/.65,.75,.85,.6,.7,.75,.55,.6,.65,.45,.55,.6,.6,.7,.8,
     1.55,.65,.7,.5,.55,.65,.45,.5,.55/
      DATA KKP3/.7,.8,.85,.65,.75,.8,.6,.65,.7,.5,.6,.65,.55,.65,.75,.5,
     1.6,.65,.45,.5,.6,.4,.45,.5/
      DATA KKP4/.75,.85,.85,.7,.8,.8,.65,.7,.75,.55,.6,.65,.5,.6,.7,.45,
     1.55,.6,.4,.45,.55,.35,.4,.45/

      X=RHMEAN
      Y = U24
      Z = ALOG10(FETCH)
      L = NCASE
 10   IF (X.GT.30) GO TO 15
      I1=1
      I2 = 1
      GO TO 30
 15   IF (X.GT.57) GO TO 20
      I1=1
      I2 = 2
      X1=30.0
      X2 = 57.0
      GO TO 30
 20   IF (X.GE.84.0) GO TO 25
      I1=2
      I2 = 3
      X1=57.0
      X2 = 84.0
```

```
      GO TO 30
25    I1=3
      I2=3
30    IF (Y.GT.84.0) GO TO 35
      J1=1
      J2 = 1
      GO TO 55
35    IF (Y.GT.260.0) GO TO 40
      J1=1
      J2 = 2
      Y1=87.0
      Y2 = 260.0
      GO TO 55
40    IF (Y.GT.465.0) GO TO 45
      J1=2
      J2 = 3
      Y1=260.0
      Y2 = 465.0
      GO TO 55
45    IF (Y.GE.700.0) GO TO 50
      J1=3
      J2 = 4
      Y1=465.0
      Y2 = 700.0
      GO TO 55
50    J1=4
      J2 = 4
55    IF (Z.GT.0.0) GO TO 60
      K1=1
      K2 = 1
      GO TO 80
60    IF (Z.GT.1.00) GO TO 65
      K1=1
      K2 = 2
      Z1=0
      Z2=1.0
```

```
      GO TO 80
   65 IF (Z.GT.2.0)    GO TO 70
      K1=2
      K2 = 3
      Z1=1.0
      Z2 = 2.0
      GO TO 80
   70 IF (Z.GE.3.0)     GO TO 75
      K1=3
      K2 = 4
      Z1=2.0
      Z2 = 3.0
      GO TO 80
   75 K1=4
      K2 = 4
   80 FACX=0.0
      FACY=0.0
      FACZ=0.0
      IF (K1.NE.K2) FACZ=(Z-Z1)/(Z2-Z1)
      GO TO (110,120,130,140),K1
  110 KP111=KKP1(I1,J1,L)
      KP112=KKP1(I1,J2,L)
      KP121=KKP1(I2,J1,L)
      KP122=KKP1(I2,J2,L)
      GO TO 150
  120 KP111=KKP2(I1,J1,L)
      KP112=KKP2(I1,J2,L)
      KP121=KKP2(I2,J1,L)
      KP122=KKP2(I2,J2,L)
      GO TO 150
  130 KP111=KKP3(I1,J1,L)
      KP112=KKP3(I1,J2,L)
      KP121=KKP3(I2,J1,L)
      KP122=KKP3(I2,J2,L)
      GO TO 150
  140 KP111=KKP4(I1,J1,L)
```

```
      KP112=KKP4(I1,J2,L)
      KP121=KKP4(I2,J1,L)
      KP122=KKP4(I2,J2,L)
  150 GO TO (210,220,230,240),K2
  210 KP211=KKP1(I1,J1,L)
      KP212=KKP1(I1,J2,L)
      KP221=KKP1(I2,J1,L)
      KP222=KKP1(I2,J2,L)
      GO TO 250
  220 KP211=KKP2(I1,J1,L)
      KP212=KKP2(I1,J2,L)
      KP221=KKP2(I2,J1,L)
      KP222=KKP2(I2,J2,L)
      GO TO 250
  230 KP211=KKP3(I1,J1,L)
      KP212=KKP3(I1,J2,L)
      KP221=KKP3(I2,J1,L)
      KP222=KKP3(I2,J2,L)
      GO TO 250
  240 KP211=KKP4(I1,J1,L)
      KP212=KKP4(I1,J2,L)
      KP221=KKP4(I2,J1,L)
      KP222=KKP4(I2,J2,L)
  250 CONTINUE
      C(1,1)=KP111+FACZ*(KP211-KP111)
      C(1,2)=KP112+FACZ*(KP212-KP112)
      C(2,1)=KP121+FACZ*(KP221-KP121)
      C(2,2)=KP122+FACZ*(KP222-KP122)
      IF (J1.NE.J2) FACY=(Y-Y1)/(Y2-Y1)
      D(1)=C(1,1) + FACY * (C(1,2)-C(1,1))
      D(2)=C(2,1) + FACY * (C(2,2)-C(2,1))
      IF (I1.NE.I2) FACX=(X-X1)/(X2-X1)
      KP=D(1) + FACX * (D(2)-D(1))

      ET4=KP * EPAN
      RETURN
      END
```

```
      REAL FUNCTION INT2D (I1,I2,J1,J2,X,Y,X1,X2,Y1,Y2,F,N)
C*****************************************************************
C             THIS FUNCTION PERFORMS A TWO DIMENSIONAL INTERPOLATION
C        ON THE TABLE FED TO IT.  I AND J ARE THE NUMBERED POSITIONS IN
C        THE TABLE WHICH THE VALUES TO BE INTERPOLATED FALL BETWEEN.
C        X1, X2, AND Y1, Y2 ARE THE VALUES IN THE THE TABLE AT THE I
C        AND J POINTS.  X AND Y ARE THE COORDINATES OF THE VALUE TO
C        BE INTERPOLATED.  F IS THE ACTUAL TABLE, AND N IS ITS FIRST
C        DIMENSION.
C*****************************************************************
      DIMENSION F(N,N)
      FACX=0.0
      FACY=0.0
      IF (I1.NE.I2) FACX=(X-X1)/(X2-X1)
      C1=F(I1,J1) + FACX * (F(I2,J1)-F(I1,J1))
      C2=F(I1,J2) + FACX * (F(I2,J2)-F(I1,J2))
      IF (J1.NE.J2) FACY=(Y-Y1)/(Y2-Y1)
      INT2D=C1 + FACY * (C2-C1)
      RETURN
      END
```

APPENDIX D

Monthly Evapotranspiration for 1978

TABLE 89. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR THE LOVELOCK VALLEY USING THE FAO MODIFIED METHODS. (1978)

Month	LOWER VALLEY[2]				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.79	1.39	1.43	1.37	1.02
Feb	1.25	1.78	1.79	1.77	1.03
Mar	3.75	4.20	3.86	3.99	3.28
Apr	4.11	4.67	4.53	4.80	4.30
May	6.65	7.69	6.52	7.32	5.46
Jun	7.25	7.86	6.65	7.46	6.78
Jul	7.84	8.06	6.91	7.62	6.96
Aug	7.77	7.55	6.51	7.21	8.21
Sep	4.92	5.13	4.32	4.67	4.58
Oct	2.81	3.05	2.89	2.83	2.98
Nov	0.66	1.13	1.55	1.44	0.72
Dec	-0.73	1.21	1.07	1.05	0.25
Total	47.07	53.72	48.03	51.53	45.57

[1]Reference Crop Evapotranspiration
[2]Carpenter Ranch

TABLE 90. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR THE LOVELOCK VALLEY USING THE FAO MODIFIED METHODS. (1978)

Month	UPPER VALLEY[2]				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.64	1.34	1.38	1.31	1.02
Feb	1.16	1.75	1.86	1.79	1.02
Mar	3.21	3.98	3.48	3.61	3.26
Apr	3.66	4.46	4.14	4.41	4.47
May	6.01	7.45	6.28	7.04	5.97
Jun	7.43	8.17	6.82	7.59	7.23
Jul	7.77	7.96	6.82	7.55	6.01
Aug	7.25	7.58	6.55	7.19	7.79
Sep	4.55	5.11	4.16	4.47	4.18
Oct	2.98	3.36	2.89	2.94	3.67
Nov	0.65	1.12	1.46	1.37	0.84
Dec	-0.91	1.13	1.06	1.03	0.25
Total	44.40	53.41	46.90	50.30	45.71

[1]Reference Crop Evapotranspiration
[2]Ruddle Ranch

TABLE 91. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR ELKO[2] USING THE FAO MODIFIED METHODS (1978)

Month	ELKO				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	-0.47	0.93	0.89	0.85	0.77
Feb	0.19	1.23	1.36	1.30	0.68
Mar	2.85	3.63	3.36	3.48	2.03
Apr	3.61	4.53	4.33	4.62	3.16
May	5.36	6.52	5.67	6.35	4.83
Jun	6.77	7.39	6.19	6.92	5.94
Jul	7.67	8.21	6.68	7.45	7.13
Aug	6.61	7.23	5.94	6.62	7.08
Sep	3.80	4.54	3.55	3.84	4.11
Oct	2.64	3.91	2.89	3.09	2.88
Nov	0.33	1.35	1.29	1.25	0.49
Dec	-1.14	0.59	0.67	0.63	0.51
Total	38.22	50.06	42.82	46.40	39.61

[1]Reference Crop Evapotranspiration
[2]Halleck Weather Station

TABLE 92. MONTHLY EVAPOTRANSPIRATION (ET_o)[1] FOR DIAMOND VALLEY USING THE FAO MODIFIED METHODS (1978)

Month	DIAMOND VALLEY				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.19	0.94	1.29	1.17	0.50
Feb	0.60	1.56	1.55	1.53	0.46
Mar	3.10	3.78	3.60	3.74	1.84
Apr	3.96	5.00	4.78	5.14	3.13
May	6.37	7.77	6.65	7.54	5.73
Jun	8.08	8.41	7.23	8.20	6.70
Jul	8.97	9.13	7.69	8.6[illegible]	6.87
Aug	8.05	8.05	7.04	7.88	6.49
Sep	4.18	4.61	4.08	4.34	3.26
Oct	2.58	3.37	2.87	2.96	2.62
Nov	0.74	1.65	1.55	1.50	0.48
Dec	-0.77	1.27	1.14	1.10	0.50
Total	46.05	55.54	49.47	53.75	38.58

[1]Reference Crop Evapotranspiration

TABLE 93. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR THE LOVELOCK VALLEY USING THE FAO MODIFIED METHODS (1978)

Month	LOWER VALLEY[2]				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.09	0.17	0.14	0.14	0.12
Feb	0.16	0.18	0.14	0.14	0.09
Mar	1.01	0.88	0.77	0.76	0.66
Apr	2.71	2.52	2.49	2.45	2.54
May	7.65	7.61	6.91	7.10	5.79
Jun	6.74	7.23	6.52	6.56	6.17
Jul	8.55	9.03	8.43	8.53	7.66
Aug	8.16	7.93	7.49	7.57	8.54
Sep	6.40	6.77	6.13	6.26	5.77
Oct	2.95	3.20	2.89	2.77	2.74
Nov	0.54	0.75	0.82	0.78	0.33
Dec	-0.25	0.47	0.27	0.27	0.11
Total	44.25	45.66	42.27	42.25	38.73

[1] ET_{crop} = kc x ET_o where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada.

[2] Carpenter Ranch

TABLE 94. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR THE LOVELOCK VALLEY USING THE FAO MODIFIED METHODS (1978)

Month	UPPER VALLEY[2]				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.07	0.16	0.14	0.13	0.12
Feb	0.15	0.18	0.15	0.14	0.09
Mar	0.87	0.84	0.70	0.69	0.65
Apr	2.42	2.41	2.28	2.25	2.64
May	6.91	7.38	6.66	6.83	6.33
Jun	6.91	7.52	6.68	6.68	6.58
Jul	8.47	8.92	8.32	8.46	6.61
Aug	7.61	7.96	7.53	7.55	8.10
Sep	5.92	6.75	5.91	5.99	5.27
Oct	3.13	3.53	2.89	2.88	3.38
Nov	0.53	0.74	0.77	0.74	0.39
Dec	-0.31	0.44	0.27	0.27	0.11
Total	41.74	45.44	41.27	41.25	38.85

[1] $ET_{crop} = kc \times ET_o$ where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada.

[2] Ruddle Ranch

TABLE 95. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR ELKO[2] USING THE FAO MODIFIED METHODS (1978)

Month	ELKO				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	-0.05	0.11	0.09	0.09	0.09
Feb	0.02	0.12	0.11	0.10	0.06
Mar	0.77	0.76	0.67	0.66	0.41
Apr	2.38	2.45	2.38	2.36	1.86
May	6.16	6.45	6.01	6.16	5.12
Jun	6.30	6.80	6.07	6.09	5.41
Jul	8.36	9.20	8.15	8.34	7.84
Aug	6.94	7.59	6.83	6.95	7.36
Sep	4.94	5.99	5.04	5.15	5.18
Oct	2.77	4.11	2.89	3.03	2.65
Nov	0.27	0.89	0.68	0.68	0.23
Dec	-0.39	0.23	0.17	0.16	0.23
Total	35.93	42.55	37.68	38.21	33.67

[1] ET_{crop} = kc x ET_o where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada.

[2] Halleck Weather Station

TABLE 96. MONTHLY EVAPOTRANSPIRATION (ET_{crop})[1] FOR DIAMOND VALLEY USING THE FAO MODIFIED METHODS (1978)

Month	DIAMOND VALLEY				
	Blaney-Criddle (in)	Radiation (in)	Penman (in)	Corrected Penman (in)	Pan Evaporation (in)
Jan	0.02	0.11	0.13	0.12	0.06
Feb	0.08	0.16	0.12	0.12	0.04
Mar	0.84	0.79	0.72	0.71	0.37
Apr	2.61	2.70	2.63	2.62	1.85
May	7.33	7.69	7.05	7.31	6.07
Jun	7.51	7.74	7.09	7.22	6.10
Jul	9.78	10.23	9.38	9.69	7.56
Aug	8.45	8.45	8.10	8.27	6.75
Sep	5.43	6.09	5.79	5.82	4.11
Oct	2.71	3.54	2.87	2.90	2.41
Nov	0.61	1.09	0.82	0.81	0.22
Dec	-0.26	0.50	0.29	0.29	0.23
Total	43.29	47.21	43.53	44.08	32.79

[1] ET_{crop} = kc x ET_o where 'kc' is a crop coefficient derived from lysimeter data in Fallon, Nevada.

TABLE 97. MONTHLY EVAPOTRANSPIRATION FOR THE STUDY AREAS USING THE SCS TECHNICAL RELEASE-21 METHOD (1978)

Month	Lovelock Valley Lower (in)	Lovelock Valley Upper (in)	Elko (in)	Diamond Valley (in)
Jan	0.05	0.44	0.11	0.25
Feb	0.65	0.63	0.23	0.36
Mar	1.86	1.69	1.30	1.29
Apr	2.13	1.91	1.57	1.69
May	4.16	3.30	2.85	2.86
Jun	5.05	5.05	4.31	4.62
Jul	6.86	6.54	5.66	6.27
Aug	5.89	5.90	4.15	5.10
Sep	3.22	3.11	2.50	2.39
Oct	2.19	2.08	1.37	1.37
Nov	0.44	0.49	0.34	0.40
Dec	0.04	0.05	-0.01	0.04
Total	32.99	31.19	24.38	26.64