



REPUBLIEK VAN SUID-AFRIKA.—REPUBLIC OF SOUTH AFRICA.

Tegniese Verslag
Technical Report No.: 35

Departement van Waterwese.
Department of Water Affairs.

EVALUATION OF DROUGHT CONDITIONS IN THE NORTHERN
REGIONS OF SOUTH AFRICA.

DEUR/BY: Basic Research Section

AFDELING/DIVISION: Hydrological Research Institute

DATUM/DATE: 1965

Opgestel en gepubliseer op gesag van—
DIE SEKRETARIS VAN WATERWESE,
PRIVAATSAK 313,
PRETORIA.

Prepared and published under the authority of—
THE SECRETARY FOR WATER AFFAIRS,
PRIVATE BAG 31
PRETORIA.

Nie vir publikasie nie.

Not for publication.

REPUBLIC OF SOUTH AFRICA.

DEPARTMENT OF WATER AFFAIRS
DIVISION OF HYDROLOGICAL RESEARCH

EVALUATION OF DROUGHT CONDITIONS IN THE NORTHERN
REGIONS OF SOUTH AFRICA.

By the Basic Research Section.

Rarely has a drought in South Africa been so wide-spread, so acute and in some regions so prolonged as that which was alleviated in most regions by soaking rains in April, 1965. More than two-thirds of the country experienced below-average rainfall in 1964 but whereas in the western regions the drought, while extreme, was preceded by one or more years of good rainfall, the drought in the northern regions persisted unremittingly for several years.

To assist those responsible for administering drought relief programmes, the intensity, duration and extent of the recent prolonged drought in the northern regions have been analysed and compared with those of previous severe droughts.

Ideally analysis of drought should be based on the daily balance between the quantity of available water in the soil and the water requirements of a crop or the natural vegetation. However, this requires information on a wide range of factors such as rainfall intensity, infiltration capacity, soil moisture characteristics and evapotranspiration rate, concerning some of which very little is known. The present analysis has therefore been based solely on monthly rainfall data. As none of the methods encountered in the literature on drought analysis was considered to be entirely appropriate, a new method had to be evolved. The analysis covered more than 150 rainfall stations with records varying in length from 30 to 80 years, and was carried out with the aid of an electronic computer.

METHOD.

There are 4 main components to the drought analysis, viz.:-

- a. calculation of various criteria such as effective monthly rainfall, mean monthly and annual rainfall and certain parameters used to establish the start and termination of drought;
- b. the test to determine the start of a drought;
- c. the test to determine the end of a drought;
- d. analysis of the duration and intensity of drought periods identified by tests (b) and (c).

A. BASIC PREMISES AND CALCULATION OF DROUGHT CRITERIA AND PARAMETERS.

The analysis is based on 4 premises, viz.:-

1./.....

- 2 -

1. Farming in any region is adapted to the prevailing climatic pattern; thus in a region of pronounced seasonal variation in rainfall the most important months agriculturally are those with the highest mean rainfall.

2. If there is some seasonal variation in mean monthly rainfall so that on the average some months are drier than others, it implies that seasonal drought of a certain intensity and duration is a normal feature of the climate of the region to which farming has become adapted and should therefore be excluded from an assessment of damaging droughts.

3. Likewise as the rainfall of any month varies from year to year, it is assumed that farming is adjusted to the average variability, and that only rainfall deficits exceeding the average deficit of any month should be included in an evaluation of harmful drought.

4. It is assumed

- (i) that the benefit to vegetation of above-average rainfall persists for some time beyond the month in which the rain fell, due to storage of moisture in the soil, and conversely
- (ii) that recovery of vegetation after drought is not immediate, the harmful effect of a drought persisting for some time after adequate rain has fallen.

The same empirical formula has been used to calculate the carry-over effect in both cases and is based on the first premise, in that the weighting factor relates to the mean rainfall of the month receiving the carry-over. In other words it is assumed that the carry-forward effect - beneficial or detrimental as the case may be - will be greater in the agriculturally more important months of high average rainfall than in normally drier months. The recorded rainfall of any month plus the quantity (positive or negative) carried forward from previous months is termed the effective rainfall.

The mean rainfall for each of the twelve months of the year having been calculated and summated to yield the mean annual rainfall, a weighting factor was calculated according to the following formula to enable effective rainfall to be calculated:-

$$W(I) = \frac{1}{10} \left\{ 1 + \frac{M(I)}{\frac{1}{12}(\text{MAP})} \right\} \dots\dots\dots (1)$$

where

W(I) is the weighting factor for month I,
M(I) is the mean rainfall for month I,
MAP is the mean annual rainfall.

W(I) varied from little more than $\frac{1}{10}$ to about $\frac{4}{10}$
where the ratio $\frac{M(I)}{\frac{1}{12} \text{MAP}}$ equalled about 3.

Thereupon the effective rainfall for each month of a station record was calculated by allowing for the carry-over effect of a surplus or deficiency of rainfall in the preceding month. Starting at the first month of the record, the mean rainfall for that month, say January, was subtracted from the measured rainfall, a positive difference indicating that excess rainfall in that month whereas a negative difference indicated that the rainfall of that month was deficient. The difference, whether/....

whether positive or negative, was weighted with the factor pertaining to the following month, the product with its sign being then added algebraically to the measured rainfall of the following month, the sum thus representing the effective rainfall of that month (in this case February). From this amended value of rainfall for February was subtracted the mean for that month, the difference being weighted by the factor of the following month (in this case March) and carried over to that month. The process was continued so as to obtain a full record of effective monthly rainfall.

Next the difference between the effective rainfall of a month and the mean rainfall for that month was calculated for all months, most of the later testing for start and termination of drought being based on these differences.

A new parameter was calculated at this stage, namely the mean monthly deficit for each of the twelve months, this being the mean of all negative differences between effective rainfall and mean rainfall for a particular month throughout the record; the deficit was deemed to be zero when a positive difference occurred, these zero deficits also being included in the calculation of mean monthly deficit. In this way the mean monthly deficit (MMD) for each of the 12 months was calculated, summation yielding the mean annual deficit (MAD).

Another set of parameters necessary for later tests of start and termination of drought was the value of highest mean monthly rainfall, the sum of the two highest values of mean monthly rainfall, the sum of the three highest monthly means and so on up to the sum of the twelve highest values of mean monthly rainfall which is of course equivalent to the mean annual rainfall.

B. TEST USED TO DETERMINE START OF DROUGHT.

It is not always possible merely by inspecting a rainfall record to decide in which month a drought commences, due to the occurrence intermittently of months of above-average rainfall within a drought period. Consequently a method had to be devised of deciding on balance whether or not a month of deficient rainfall constitutes the start of a drought, should it be followed by months of both above- and below-average rainfall.

The test is based on a comparison of the sum of the negative differences * from the point in time at which the test commences, with a sliding scale of 12 values calculated by interpolating linearly between the maximum value of mean monthly rainfall (MMMR) and the mean annual deficit (MAD). A monthly increment x is thus obtained from the formula

$$x = \frac{\text{MAD} - \text{MMMR}}{11} \dots\dots\dots (2)$$

The first value on the sliding scale is equal to MMMR, being the maximum deficit that can occur in a single month (when no rain falls in the month which normally receives most rain). The second value on the sliding scale is obtained by adding $1x$ to MMMR, the third by adding $2x$, and so on up to MMMR + $11x$ which is equivalent to MAD.

The test for start of drought was conducted as follows:

Firstly it was assumed that no drought prevailed just prior to the start of the available rainfall record.

The/.....

* Hereinafter the term "difference" refers to the difference between the effective rainfall of a month and the mean rainfall for that month of the year.

- 4 -

The difference between the rainfall of the first month of the record and the mean for that month of the year was inspected; if it was positive, obviously it did not signify the start of a potential drought and the differences of the succeeding months were inspected until a month with a negative difference was found, such a month representing the start of a potential drought. The absolute value of the negative difference was compared with the first value of the sliding scale, viz. $MMMR$ and if the latter was equalled (a rare possibility) a drought was deemed to have started. However if $MMMR$ was not equalled the difference of the next month was inspected and if also negative was added to the negative difference of the first month (to which the test for start of drought was being applied) and compared with the second value on the sliding scale, namely $MMMR + 1x$; if this criterion was exceeded by the absolute value of the two deficits combined, a drought was deemed to have started from the first month. In this manner the absolute value of the sum of all rainfall deficits occurring from the first month over a period of a year was tested sequentially against the 12 values of the sliding scale. If at any time the absolute value of all deficits occurring from, and including, the first month up to, and including, the i th. month exceeded the value $MMMR + x(i-1)$, a drought was deemed to have started from the first month. However, simultaneously with this sequential testing the algebraic sum of all differences from the first month of test was found and if at any time during the 11 tests the algebraic sum became positive (that is, rainfall surpluses exceed rainfall deficits - relative to the mean - over the period concerned) the potential drought was considered to have ended. Testing for start of drought then recommenced at the next month with a negative difference after that month from which the preceding test was carried out.

The outcome of this 12 month test could be one of the following:-

- (i) A drought start was found, in which case testing for termination commenced from the first month with a positive difference following the month in which the drought started.
- (ii) A potential drought was found and terminated, a contingency which has already been discussed.
- (iii) The start of a drought was not found, nor was the potential drought terminated; in this case testing was resumed from the first month with a negative difference following the month from which the previous inconclusive test had been carried out.

Where the start of a drought was not found, as in (ii) and (iii), testing recommenced repeatedly until one of the tests for start of drought was satisfied.

C. TEST TO DETERMINE THE TERMINATION OF DROUGHT.

In the first instance the test was applied to the period following the first month with a positive difference occurring after the start of a drought.

- (i) A precondition to be satisfied was that at least one of the two months immediately following the initial month with a positive difference after the start of a drought should also have a positive difference. If this condition was met

then/.....

- 5 -

then the initial month qualified for further testing for termination of drought, otherwise the conditional test recommenced from the second month with a positive difference.

- (ii) The precondition having been satisfied, tests (ii) and (iii) were applied simultaneously. Test (ii) was designed to establish whether the spell of above-average rainfall constituted merely an interruption or suspension of drought rather than its termination, the drought being resumed thereafter.

It entailed simply adding algebraically all differences from and including that of the first month of the test; if the sum became negative before a termination condition had been satisfied by test (iii), then the drought was deemed to have been only temporarily interrupted. Testing for termination thereupon recommenced anew at the first month with a positive difference following that from which the previous unsuccessful test had proceeded.

- (iii) This test - carried out simultaneously with, and subject to, test (ii) - comprised 10 sequential tests. In the first test the actual rainfall during the three months following and including the month from which the test started was compared with the sum of the three highest values of mean monthly rainfall; if the actual rainfall was the higher, the drought was considered to have been terminated, but if not then the sum of the first four months was compared with the sum of the four highest values of mean monthly rainfall, and so on - should the drought not yet have been terminated - up to a comparison of the sum of the rainfall of the twelve months following and including the month from which the test commenced, with the mean annual rainfall. By this stage either the drought had been terminated - in which case it was deemed to have ended in the month from which the multiple test had been initiated - or drought conditions had been resumed after a temporary interruption, in which case the algebraic sum of the differences would have become negative as described in test (ii).

Once a termination had occurred, testing for start of the next drought commenced at the first month with a negative difference following the month in which the drought ended.

D. STUDY OF DATA IN PERIODS IDENTIFIED AS DROUGHTS.

To enable the various droughts identified within a long term rainfall record to be compared, the following data were recorded in respect of each:-

1. The month in which the drought started.
2. The month by which the drought had ended.
3. The duration of the drought, in months.
4. The sum of all negative differences - that is, deficits below the mean - occurring during the span of a drought, in inches.

5./.....

- 6 -

5. The sum of mean monthly deficits in inches over a period identical to that of the drought, the notation $\sum \frac{1}{3} \text{MMD}$ being used to indicate the sum of mean monthly deficits from the start to the termination of the drought. This could be compared with the sum of actual deficits occurring during the drought period (see 3) to provide a measure of the relative intensity of the drought in terms of the mean drought, but this is considered to be inferior to the method described in 8 below.
6. The sum throughout the drought period of deficits in excess of the mean deficit of each month, termed the total excess deficit.
7. The number of months during which excess deficits occurred during a drought.
8. An index Y of drought intensity, obtained by dividing the total excess deficit (see 6) by $\sum \frac{1}{3} \text{MMD}$ (see 5).
9. A weighted drought severity index YD, being the product of the severity index Y (see 8) and the duration of the drought (see 3). This is the key unit, making it possible to compare directly droughts differing in both intensity and duration, which have occurred in a particular rainfall record.
10. The rainfall occurring during the drought expressed as a percentage of the sum of mean monthly rainfall over the period of the drought.
11. The rainfall occurring during the preceding wet period (that is, which intervened since the previous drought) expressed as a percentage of the sum of the mean monthly rainfall over that period.

The mean monthly rainfall and deficits have all been recorded in inches, being the unit used throughout.

RESULTS.

To suit the convenience of those responsible for allocating financial relief to farmers, the rainfall records used in the analysis were grouped according to the Agro-economic Regions within, or near, which they were located, and averaged so as to obtain a single representative rainfall record for each Region. Although the disposition of the rainfall stations is such that their average does not necessarily correspond accurately with the true average rainfall over a Region, such a record is nevertheless quite suitable for comparing the relative intensity of droughts which have occurred from time to time in any Region. As the station records did not all commence in the same year, some of the early averaged data were discarded, only years of record incorporating at least 75% of the total number of stations falling in a Region being accepted. Drought data pertaining to each Agro-economic Region are listed in Table 1 to 19, the distribution of rainfall stations, and their identifying numbers, being shown in Figure 1.

Table 20/.....

- 7 -

Table 20 lists the individual rainfall stations, the monthly rainfall of which was averaged for each Agro-economic Region as shown, together with the name, latitude and longitude of each station.

It will be noted that in the following Regions the most recent drought ^{*} was more severe (judged by the $\frac{Y \times D}{\text{index}}$) than any which occurred previously within the period of record:-

CENTRAL TRANSVAAL IRRIGATION AREAS:-

A1 Western Transvaal (Western region)

CATTLE GRAZING AREAS:-

M5 Pienaars River and Olifants River Area (Western region)
 M6/1 North Western Transvaal (Rooiberg Blouberg Area)
 M6/2 North Western Transvaal (North Western Waterberg)
 M6/3 North Western Transvaal (Rustenburg Thabazimbi Area)
 M7 Agter Soutpansberg.

To permit of more detailed study of variations in drought duration and intensity within the regions, the record of each station was analysed individually. Listed in Table 21 for each rainfall station are data pertaining to the most recent drought. By way of comparison the five worst droughts in the record (based on the $Y \times D$ index) together with the number of years in the record, are also recorded for each station. Whenever the current drought was one of the five worst droughts in the record, only the four worst droughts apart from the current one were listed. In all cases, for each station, the droughts were assigned order numbers, and for each listed drought the order number was also listed, so that in cases where the current drought was not one of the five worst droughts in a record, it can still be seen from Table 21 how many times a worse drought occurred.

It will be noted that in most instances the recent drought is shown as continuing beyond March 1965, the date at which the study terminated. This reflects what the effect of the drought carry-over would have been even if monthly rainfall in the ensuing 12 months had exceeded the average by 10%. This assumption was made for lack of real figures. It must be stressed therefore that in most cases the actual drought might not have been broken yet, April 1965 being merely the date at which the study was terminated.

According/.....

*

The term "most recent" or "current" or "present" drought refers not only to a continuous dry period preceding March 1965, but also to cases where a drought was terminated in 1964 (usually in November) and started again in January 1965. In the latter cases the drought index and duration of the two separate droughts were combined and distinguished by an asterisk.

- 8 -

According to the theory, the Y x D index is not only comparable in time for one station or region, but is also comparable from station to station and from area to area. Keeping this in mind the Y x D indexes for the current drought were plotted on a map for each of the Agro-economic regions. It is evident from this map, shown in Figure 2, that the drought stricken territory can be divided broadly into five areas, all differing in the degree to which they have been affected. The drought condition of region M6/1 was based on the average rainfall of stations representative of only the eastern part of the region and consequently reflects only the drought condition of that part, this being the reason why the western part of M6/1 was classified under the area of most severe drought. These five regions, each consisting of one or more agro-economic regions, are shown in Figure 2, by means of different shading. The Y x D index for each Agro-economic region (in rounded thousands) as well as the duration in months, is also shown.

The division of the country into Agro-economic Regions is based on a classification of regions of the same agricultural potentiality, which is a function of topography, temperature, soil type, vegetation and rainfall. Thus, although related to some, rainfall is not the only characteristic of an Agro-economic Region and a drought investigation (based only on rainfall data) will therefore not conform exactly to the boundaries of these regions. As expected, the drought indexes (see Table 21) of individual stations in a region will show discrepancies, especially near the boundaries where transition lines are not easy to demarcate.

Table 22 shows the five groups of areas, with the regions they comprise together with the Y x D index and duration of the current drought for each region. The areas have been arranged in descending order of magnitude of severity of the current drought, as judged by the Y x D index.

ACKNOWLEDGEMENTS.

The contributions of the following are acknowledged:-

- (i) P.H. HERBST.
Evolution of the theory and the tests for start and termination of drought in a programmable form.
- (ii) D.B. BREDEKAMP.
Suggestions about the compilation of the carry-over formula and the I.B.M. programme.
- (iii) A. v.d. BERG (Dept. of Education, Arts and Science)
Compilation of the I.B.M. Programme.
- (iv) H. BARKER.
Preparatory analysis and compilation of maps.
- (v) M. YOUNG, L. JACOBS, M. DE VILLIERS AND S. MACDONALD.
Abstraction and preparation of rainfall data.
- (vi) K.J. HARVEY AND STAFF.
Card punching and verifying.

TABLE 1.

REGION A1 WESTERN PORTION

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING NET PERIOD
2 1920	9 1920	7	-3.3	-2.9	-1.0	6	34.0	238.1	71.1	106.2
3 1923	3 1934	12	-8.7	-5.7	-4.7	7	81.6	979.4	69.7	112.1
10.1925	1 1928	27	-22.1	-13.4	-11.9	15	88.9	2400.9	75.4	155.7
1 1930	11 1933	46	-31.6	-21.5	-15.4	30	71.5	3289.7	75.9	117.8
1 1935	1 1936	12	-10.4	-5.7	-6.2	8	107.4	1288.9	68.6	129.6
3 1937	12 1937	9	-6.9	-3.6	-3.4	7	95.1	856.2	48.9	132.0
2 1938	12 1938	10	-7.8	-4.3	-4.3	6	99.2	991.5	61.2	153.6
2 1941	8 1942	18	-10.7	-8.5	-5.2	12	61.0	1097.7	87.8	125.5
12 1943	6 1944	6	-7.6	-3.7	-4.7	4	126.0	756.3	61.4	148.4
12 1944	1 1946	13	-16.1	-7.2	-10.8	11	150.3	1953.8	59.0	205.7
4 1946	3 1948	23	-12.0	-10.7	-4.5	15	42.3	973.0	80.7	160.1
12 1948	11 1949	11	-9.0	-5.1	-4.9	8	96.6	1062.4	72.4	131.8
2 1950	11 1952	33	-17.8	-15.1	-7.0	18	46.1	1522.0	91.3	130.4
2 1959	11 1960	21	-11.3	-9.4	-5.0	10	53.1	1114.7	79.7	110.3
7 1961	5 1965	46	-34.6	-22.4	-17.3	32	77.2	3551.5	77.7	129.1

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
4.16	3.50	3.35	1.67	0.79	0.37	0.28	0.20	0.66	1.93	3.49	4.14	24.53
WEIGHTS.												
0.304	0.271	0.264	0.182	0.138	0.118	0.114	0.110	0.132	0.134	0.271	0.303	
MEAN MONTHLY DEFICITS.												
-0.66	-0.69	-0.79	-0.47	-0.35	-0.24	-0.19	-0.14	-0.29	-0.46	-0.67	-0.78	-5.74

TABLE 2.

REGION A4

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1919	3 1921	26	-16.2	-12.2	-7.4	18	60.4	1571.3	80.7	136.0
6 1921	1 1923	19	-7.8	-8.5	-3.1	8	36.3	689.2	86.7	173.6
3 1923	9 1924	18	-13.6	-7.6	-7.4	12	97.7	1757.7	69.5	157.3
10 1925	1 1928	27	-21.3	-13.1	-11.4	16	87.2	2353.4	78.9	144.4
4 1930	11 1933	43	-33.0	-18.9	-18.4	31	97.3	4185.5	71.7	113.7
1 1935	2 1936	13	-11.4	-6.1	-6.2	10	102.1	1325.7	71.7	134.9
3 1937	12 1937	9	-8.1	-3.7	-4.7	8	126.3	1136.6	45.9	122.0
1 1940	3 1940	2	-2.8	-1.2	-1.6	2	140.4	280.9	68.6	107.3
3 1941	1 1942	10	-6.9	-4.4	-3.9	7	88.4	384.1	72.1	114.5
12 1944	1 1947	25	-21.2	-12.3	-13.0	17	106.0	2649.9	71.9	134.2
5 1947	11 1949	30	-17.2	-13.0	-8.7	17	66.9	2006.9	82.6	113.7
7 1950	11 1952	28	-16.6	-12.4	-7.6	16	63.2	1769.8	88.1	135.2
6 1955	6 1957	24	-8.8	-11.1	-4.1	9	36.8	882.2	91.9	117.9
11 1957	11 1958	12	-7.5	-5.5	-3.4	7	61.1	733.6	86.0	301.3
2 1959	11 1960	21	-8.6	-9.1	-3.7	9	40.4	847.9	88.3	105.5
7 1961	11 1962	16	-8.6	-6.9	-3.7	10	54.1	865.7	82.8	119.7
12 1962	5 1965	29	-21.7	-14.0	-11.8	17	84.5	2451.1	81.4	159.8

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
4.12	3.68	3.38	1.67	0.80	0.36	0.33	0.30	0.73	2.28	3.48	4.02	25.15
WEIGHTS.												
0.297	0.275	0.261	0.180	0.138	0.117	0.116	0.114	0.135	0.209	0.266	0.292	
MEAN MONTHLY DEFICITS.												
-0.54	-0.61	-0.66	-0.43	-0.34	-0.21	-0.20	-0.20	-0.32	-0.62	-0.71	-0.69	-5.53

REGION A5

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT.	IN PRECEDING WET PERIOD
1 1922	2 1924	25	-18.8	-11.3	-10.0	15	98.1	2203.7	75.9	156.0
10 1925	4 1928	30	-22.8	-14.6	-13.4	15	91.9	2757.9	81.4	138.9
5 1930	11 1933	42	-20.1	-17.4	-7.7	27	44.1	1851.2	83.2	117.7
3 1934	1 1936	22	-18.9	-9.2	-10.2	17	111.8	2459.7	62.3	125.5
2 1938	12 1938	10	-8.0	-3.9	-4.6	7	115.9	1158.8	64.3	122.8
5 1941	3 1942	10	-8.6	-4.3	-4.5	7	104.1	1040.8	60.6	131.1
12 1944	11 1947	35	-29.4	-15.4	-17.9	27	116.8	4083.1	71.2	129.4
3 1949	11 1949	8	-3.8	-2.5	-1.5	7	59.0	471.9	55.3	117.2
2 1950	4 1951	14	-10.5	-6.8	-5.1	9	75.8	1060.8	75.0	117.4
11 1951	11 1952	12	-7.8	-5.3	-4.0	7	74.3	891.2	76.2	210.7
2 1953	5 1953	1	-3.1	-2.8	-2.2	1	265.8	265.8	5.1	129.8
11 1957	9 1958	10	-9.6	-4.6	-6.1	7	130.6	1305.6	66.8	119.9
1 1960	11 1960	10	-6.5	-4.0	-3.4	7	95.7	857.3	69.1	116.6
7 1961	11 1962	16	-8.0	-6.3	-3.2	10	50.8	813.3	76.6	141.0
1 1963	10 1964	21	-14.7	-8.9	-8.6	14	97.0	2037.4	76.0	126.1
11 1964	5 1965	6	-5.0	-3.9	-2.7	2	68.8	412.8	76.6	287.6

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.94	3.53	2.85	1.62	0.70	0.27	0.22	0.18	0.55	1.75	3.64	4.30	23.57
WEIGHTS.												
0.301	0.280	0.245	0.183	0.136	0.114	0.111	0.109	0.128	0.189	0.205	0.319	
MEAN MONTHLY DEFICITS.												
-0.65	-0.84	-0.61	-0.43	-0.31	-0.18	-0.15	-0.12	-0.23	-0.45	-0.62	-0.74	-5.33

REGION A8.

DROUGHT.			DEFICIT.		EXCESS DEFICIT.			PERCENT OF MEAN RAINFALL.		
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	Y+D	IN DROUGHT	IN PRECEDING WET PERIOD
1 1916	11 1916	10	-13.1	-4.9	-8.4	9	170.7	1707.3	44.3	0.
3 1918	10 1920	31	-26.3	-15.8	-16.0	21	101.2	3136.8	75.4	129.3
1 1922	8 1922	7	-11.1	-4.0	-7.3	6	182.3	1276.3	44.1	118.3
4 1923	8 1924	16	-12.5	-8.0	-6.3	12	78.9	1261.9	72.0	114.4
1 1925	2 1925	1	-3.8	-0.9	-2.9	1	335.2	335.2	0.	172.0
10 1925	7 1927	21	-19.1	-12.7	-10.0	12	78.5	1648.8	79.1	145.9
6 1930	4 1931	10	-12.8	-5.8	-7.6	6	132.2	1322.1	62.5	132.7
2 1933	1 1934	11	-13.8	-5.8	-8.3	10	143.2	1575.5	49.8	112.3
1 1935	1 1936	12	-15.4	-6.7	-9.1	10	135.8	1630.2	53.4	125.8
3 1937	5 1939	26	-23.4	-14.6	-13.7	14	93.4	2438.5	85.0	125.7
1 1941	3 1942	14	-16.3	-8.6	-8.7	11	101.8	1424.6	62.7	137.0
11 1942	3 1943	4	-6.7	-3.6	-3.0	4	83.4	333.6	70.7	197.2
10 1943	12 1947	50	-40.5	-27.9	-21.6	31	77.3	3867.1	81.1	193.3
6 1950	3 1951	9	-9.3	-5.1	-6.0	6	118.3	1065.0	76.6	118.6
11 1951	1 1952	2	-4.1	-0.1	-2.3	2	131.2	262.5	44.8	133.3
3 1958	1 1959	10	-11.1	-4.3	-7.0	8	147.0	1470.2	53.8	116.3
3 1959	2 1960	11	-6.8	-5.7	-3.3	6	57.8	635.6	79.2	148.5
2 1961	11.1962	21	-13.4	-10.7	-6.2	11	57.6	1209.8	81.0	128.1
1 1963	5 1965	28	-25.2	-16.5	-13.8	17	83.7	2344.7	78.0	140.8

JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL.
MEAN MONTHLY RAINFALL.												
4.87	4.22	3.48	1.86	0.78	0.50	0.55	0.40	0.67	1.76	3.53	4.63	27.26
WEIGHTS.												
0.314	0.286	0.253	0.182	0.134	0.122	0.124	0.117	0.129	0.178	0.256	0.304	
MEAN MONTHLY DEFICITS.												
-0.36	-1.02	-0.72	-0.58	-0.31	-0.24	-0.24	-0.16	-0.25	-0.53	-0.74	-1.01	-6.67

TABLE 5.

REGION B4

DROUGHT.			DEFICIT.		EXCESS DEFICIT.			PERCENT OF MEAN RAINFALL.		
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1916	1 1917	12	-7.2	-5.2	-2.9	10	55.1	661.5	74.5	121.5
1 1919	1 1920	12	-9.6	-5.2	-5.2	10	100.3	1203.3	62.4	132.5
3 1920	2 1921	11	-8.5	-4.6	-4.6	8	100.8	1108.8	61.8	150.5
6 1921	1 1923	19	-11.5	-7.6	-6.0	12	78.2	1485.7	74.6	172.6
3 1923	9 1924	18	-12.8	-7.2	-7.2	13	99.3	1787.9	63.9	175.8
7 1925	1 1928	30	-19.8	-12.6	-10.8	18	85.2	2555.6	81.5	159.7
9 1930	1.1931	4	-2.7	-1.9	-0.9	3	49.0	195.9	74.1	114.3
3 1931	11 1933	32	-21.3	-13.1	-11.0	25	84.0	2608.6	70.9	130.6
1 1935	12 1935	11	-7.6	-4.6	-4.2	8	92.4	1016.8	71.7	141.6
3 1937	12 1937	9	-8.0	-3.3	-4.7	9	143.3	1289.4	34.8	125.0
2 1938	12 1938	10	-5.6	-3.9	-3.0	5	77.4	774.0	74.5	121.2
12 1939	12 1940	12	-5.5	-5.2	-1.8	7	34.0	408.3	85.6	140.2
3 1941	10 1942	19	-12.1	-7.5	-6.5	13	86.0	1633.9	67.2	133.2
2 1944	6 1944	4	-7.5	-2.2	-5.4	4	249.7	997.4	26.3	148.1
12 1944	1 1947	25	-18.1	-11.7	-10.2	18	87.5	2188.6	73.4	217.5
5 1948	12 1949	19	-11.9	-7.3	-6.2	13	84.4	1604.3	68.9	108.2
11 1951	2 1953	15	-11.4	-7.1	-6.7	10	95.3	1429.3	77.3	128.4
1 1959	12 1959	11	-5.7	-4.6	-2.6	5	56.2	618.7	76.6	111.0
8 1961	11 1962	15	-7.6	-6.0	-3.9	11	64.2	962.4	86.8	109.3
2 1963	5 1965	27	-20.2	-12.2	-11.4	17	93.5	2523.7	78.1	123.3

JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.69	3.23	3.35	1.58	0.69	0.31	0.23	0.25	0.52	1.59	2.74	3.33	21.50
WEIGHTS.												
0.306	0.280	0.287	0.188	0.138	0.117	0.113	0.114	0.129	0.189	0.253	0.286	
MEAN MONTHLY DEFICITS.												
-0.64	-0.65	-0.74	-0.45	-0.33	-0.20	-0.15	-0.17	-0.26	-0.40	-0.59	-0.64	-5.21

TABLE 6.

REGION 01

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
10 1925	9 1929	47	-29.1	-20.4	-15.1	26	74.1	3482.8	82.4	147.7
5 1930	1 1931	8	-6.0	-2.0	-3.4	6	121.0	967.8	58.1	118.6
9 1931	11 1933	26	-16.5	-11.0	-8.4	18	75.9	1973.6	74.6	120.1
3 1934	2 1936	23	-16.2	-9.5	-9.2	14	97.1	2234.0	70.5	131.8
2 1938	12 1938	10	-6.4	-3.8	-3.5	5	91.4	913.6	75.9	115.8
5 1941	3 1942	10	-8.2	-4.2	-4.9	8	117.2	1171.9	61.3	125.0
4 1944	1 1946	21	-15.7	-8.3	-9.2	16	110.2	2313.4	69.0	122.0
4 1946	11 1947	19	-11.7	-7.0	-6.2	15	89.1	1693.8	55.5	172.1
12 1948	11 1949	11	-5.7	-4.5	-2.7	6	59.8	657.3	78.3	118.2
2 1950	4 1951	14	-11.8	-6.5	-6.4	11	98.3	1376.5	71.9	113.1
11 1951	11 1952	12	-8.3	-5.2	-5.0	6	96.8	1161.5	75.6	213.0
11 1957	9 1958	10	-7.3	-4.5	-3.9	7	87.2	872.2	75.3	126.6
3 1959	11 1959	8	-3.5	-2.4	-1.3	7	54.4	435.3	61.4	133.8
1 1960	4 1960	3	-3.9	-2.0	-2.3	2	115.4	346.2	67.0	123.7
7 1961	11 1962	16	-9.6	-6.1	-4.5	11	74.2	1187.3	70.6	126.1
2 1963	10 1964	20	-13.1	-7.9	-7.0	13	88.8	1775.3	76.8	114.6
1 1965	5 1965	4	-5.2	-2.4	-3.3	2	138.7	554.8	60.2	156.0

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.97	3.45	2.62	1.59	0.57	0.30	0.24	0.13	0.55	1.80	3.55	4.30	23.08
WEIGHTS.												
0.306	0.279	0.236	0.183	0.130	0.116	0.113	0.107	0.129	0.194	0.285	0.324	
MEAN MONTHLY DEFICITS.												
-0.60	-0.81	-0.57	-0.41	-0.25	-0.20	-0.16	-0.09	-0.23	-0.46	-0.63	-0.74	-5.16

TABLE 7.

REGION 02

DROUGHT.			DEFICIT.		EXCESS DEFICIT				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING PERIOD
11 1925	2 1929	39	-26.4	-16.0	-13.6	26	85.1	3317.8	78.8	132.7
9 1931	12 1932	15	-8.9	-5.8	-4.2	10	73.7	1104.8	76.7	115.2
2 1933	11 1933	9	-4.8	-2.9	-2.3	7	79.7	716.9	49.3	157.2
12 1934	5 1936	17	-11.9	-7.9	-6.3	10	80.3	1365.1	74.9	113.3
4 1937	12 1937	8	-4.0	-2.0	-2.5	5	124.0	991.8	50.9	132.8
1 1941	3 1942	14	-11.0	-6.2	-5.4	11	86.8	1215.4	73.1	124.7
3 1944	1 1946	22	-13.8	-8.0	-6.9	17	86.2	1895.7	70.2	118.7
4 1946	3 1948	23	-13.8	-8.8	-7.6	16	85.7	1971.4	72.4	141.2
2 1950	11 1952	33	-18.7	-12.4	-10.3	18	83.1	2742.1	82.3	112.6
11 1957	9 1958	10	-10.8	-4.2	-6.6	10	159.8	1597.6	54.0	119.9
3 1959	11 1960	20	-8.9	-6.9	-4.4	12	63.0	1260.6	80.8	131.3
3 1961	11 1962	20	-10.8	-6.9	-5.1	15	73.2	1464.5	71.4	136.9
1 1963	10 1964	21	-14.7	-8.0	-8.4	15	105.1	2207.0	72.4	141.3

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.78	3.26	2.61	1.40	0.52	0.31	0.27	0.13	0.50	1.37	2.82	3.74	20.59
WEIGHTS.												
0.319	0.289	0.251	0.181	0.130	0.118	0.116	0.108	0.129	0.180	0.264	0.317	
MEAN MONTHLY DEFICITS.												
-0.71	-0.74	-0.63	-0.41	-0.21	-0.15	-0.14	-0.07	-0.22	-0.36	-0.45	-0.64	-4.73

TABLE 8.

REGION 04.

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1926	1 1928	24	-13.8	-9.5	-7.3	16	76.2	1829.5	79.1	129.1
3 1928	6 1929	15	-6.2	-6.1	-2.4	7	40.0	599.7	87.8	119.0
2 1930	1 1931	11	-7.2	-4.2	-3.1	10	74.6	820.1	62.0	143.6
12 1931	11 1933	23	-19.6	-9.0	-12.0	19	134.1	3083.2	58.7	129.5
3 1937	1 1939	22	-14.2	-8.4	-7.3	15	86.4	1900.4	69.8	122.2
12 1939	12 1940	12	-5.6	-4.6	-2.3	6	48.2	578.4	80.4	130.6
3 1941	2 1942	11	-9.7	-4.3	-6.1	8	142.4	1566.2	50.3	141.7
12 1944	1 1946	13	-11.0	-5.9	-6.4	10	108.8	1413.9	56.1	145.4
4 1946	12 1947	20	-10.0	-7.3	-4.4	14	59.6	1192.4	74.3	135.9
5 1948	3 1950	22	-14.8	-8.5	-8.0	14	93.6	2058.8	68.0	138.0
6 1951	10 1952	16	-10.3	-5.6	-6.1	8	109.4	1750.1	65.9	135.1
4 1954	1 1955	9	-5.4	-3.1	-2.7	5	87.9	791.4	55.5	99.6
2 1958	12 1958	10	-5.2	-3.6	-2.3	6	63.6	635.9	63.4	132.7
2 1959	2 1960	12	-5.7	-4.8	-2.6	5	53.8	645.9	79.5	122.7
9 1961	2 1962	5	-3.7	-2.4	-2.0	3	83.0	415.0	82.4	119.5
12 1963	5 1965	17	-14.4	-7.4	-8.5	11	114.0	1937.7	70.3	121.5

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.07	2.70	3.06	1.74	0.64	0.29	0.30	0.33	0.49	1.54	2.36	2.62	19.14
WEIGHTS.												
0.293	0.269	0.292	0.209	0.140	0.118	0.119	0.121	0.130	0.196	0.248	0.264	
MEAN MONTHLY DEFICITS.												
-0.60	-0.49	-0.55	-0.48	-0.29	-0.17	-0.16	-0.20	-0.26	-0.43	-0.58	-0.55	-4.77

TABLE 9.

REGION 06

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1919	1 1920	12	-9.6	-4.8	-5.2	10	109.1	1309.2	57.4	126.6
4 1920	2 1921	10	-7.6	-3.5	-4.7	7	134.1	1341.1	50.2	148.6
6 1921	1 1923	19	-13.5	-7.0	-8.4	13	120.6	2291.0	62.5	161.6
3 1923	9 1924	18	-9.9	-6.7	-5.1	10	75.7	1363.1	70.8	165.2
7 1925	1 1928	30	-20.3	-11.6	-11.6	19	100.3	3009.0	72.1	160.1
2 1930	1 1931	11	-4.8	-4.2	-1.0	7	23.4	257.1	73.9	110.4
12 1931	11 1933	23	-16.2	-9.1	-9.3	18	102.5	2356.6	65.5	119.1
1 1935	12 1935	11	-5.6	-4.2	-2.8	7	66.3	728.8	77.1	139.6
3 1937	12 1937	9	-6.7	-3.0	-3.7	8	125.3	1127.6	37.6	124.7
3 1938	12 1938	9	-5.0	-3.0	-2.6	5	88.0	792.3	61.6	113.7
12 1939	12 1940	12	-5.6	-4.8	-2.3	8	48.5	582.6	84.9	130.5
3 1941	3 1942	12	-10.6	-4.8	-6.2	9	130.4	1565.1	53.4	148.3
12 1944	9 1947	33	-19.4	-13.3	-9.7	21	72.6	2395.9	80.2	142.3
12 1948	3 1950	15	-11.0	-6.6	-5.5	11	83.0	1245.6	73.1	121.4
11 1951	1 1955	38	-19.0	-15.5	-9.6	19	62.4	2370.0	80.5	142.5
5 1958	12 1958	7	-1.8	-1.9	-0.6	4	32.3	225.8	73.5	119.8
2 1959	12 1959	10	-4.7	-3.6	-2.2	4	61.9	619.2	75.8	121.9
12 1961	11 1962	11	-6.0	-4.3	-2.4	9	56.5	621.9	73.1	117.1
12 1963	5 1965	17	-14.9	-7.7	-8.8	12	114.0	1938.1	69.2	123.1

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.20	3.03	3.16	1.57	0.61	0.29	0.23	0.29	0.44	1.25	2.25	2.76	19.06
WEIGHTS.												
0.301	0.291	0.299	0.199	0.138	0.118	0.114	0.118	0.127	0.179	0.241	0.273	
MEAN MONTHLY DEFICITS.												
-0.58	-0.64	-0.66	-0.45	-0.28	-0.18	-0.15	-0.19	-0.22	-0.35	-0.51	-0.53	-4.79

REGION M1

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
5 1921	1 1923	20	-13.7	-6.1	-8.4	16	137.0	2740.4	48.0	122.6
3 1923	11 1924	20	-7.3	-6.2	-2.8	10	45.4	908.0	72.1	187.4
7 1925	10 1927	27	-15.9	-8.8	-9.6	15	109.8	2965.4	63.6	196.8
5 1928	8 1929	15	-4.9	-4.6	-2.5	7	53.1	797.2	86.1	119.7
11 1929	1 1931	14	-5.3	-5.0	-2.5	7	50.2	702.6	77.7	386.9
12 1931	11 1933	23	-14.9	-7.9	-8.7	19	110.7	2545.1	60.2	118.6
1 1935	3 1936	14	-4.9	-5.3	-1.4	7	27.4	383.9	55.2	148.6
4 1937	10 1938	18	-7.6	-5.4	-3.9	12	71.8	1292.4	68.3	123.1
12 1939	12 1940	12	-5.1	-4.1	-2.0	7	48.6	583.1	75.0	137.7
3 1941	2 1942	11	-7.3	-3.6	-4.5	8	126.4	1390.8	45.0	180.2
3 1944	1 1946	22	-11.8	-7.1	-6.7	15	93.7	2062.0	67.8	144.7
6 1946	12 1947	18	-7.8	-5.4	-3.5	11	65.3	1176.0	69.8	121.4
5 1948	2 1950	21	-12.7	-6.7	-7.0	14	104.6	2197.4	56.6	147.4
6 1951	2 1953	20	-12.6	-6.5	-7.4	12	114.1	2282.0	58.6	142.7
6 1956	6 1957	12	-5.2	-4.1	-1.8	8	44.4	533.1	75.9	117.7
2 1958	11 1958	9	-4.1	-2.7	-1.8	6	68.6	617.2	56.8	210.3
12 1961	11 1962	11	-5.2	-3.8	-2.6	8	68.8	756.9	70.4	113.2
12 1963	5 1965	17	-14.1	-6.8	-8.4	10	123.5	2098.8	61.2	153.7

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
2.29	2.46	2.82.	1.41	0.59	0.24	0.16	0.28	0.33	0.80	1.49	1.99	14.87
WEIGHTS.												
0.285	0.299	0.328	0.214	0.148	0.119	0.113	0.122	0.127	0.165	0.220	0.260	
MEAN MONTHLY DEFICITS.												
-0.58	-0.57	-0.58	-0.41	-0.26	-0.15	-0.10	-0.19	-0.20	-0.23	-0.37	-0.51	-4.14

REGION 12

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1927	7 1927	6	-6.1	-2.7	-3.4	6	122.8	737.0	49.9	140.8
11 1928	3 1929	4	-3.4	-2.2	-1.7	3	78.1	312.3	58.2	130.3
2 1930	1 1931	11	-5.4	-3.7	-3.0	7	80.8	888.5	61.3	143.4
12 1931	11 1933	23	-18.4	-8.4	-11.5	20	136.5	3139.3	47.6	128.5
1 1935	3 1936	14	-7.3	-5.7	-2.6	9	46.4	649.5	74.9	144.9
3 1937	10 1938	19	-9.2	-6.3	-4.6	14	72.5	1377.7	61.7	120.9
12 1939	9 1940	9	-4.9	-3.5	-2.3	6	64.9	583.8	81.9	142.1
3 1941	2 1942	11	-7.7	-3.8	-4.7	7	124.9	1374.3	40.1	156.2
3 1944	1 1946	22	-12.5	-7.5	-6.9	16	91.1	2003.4	57.4	136.7
6 1946	4 1947	10	-7.5	-3.7	-3.8	8	101.3	1012.7	49.2	136.9
5 1948	2 1950	21	-13.1	-7.1	-7.0	16	98.0	2057.2	52.0	140.0
6 1951	2 1953	20	-13.6	-6.9	-7.8	13	114.0	2280.5	53.9	153.2
5 1954	1 1955	8	-4.3	-2.1	-2.3	7	108.9	870.9	28.4	118.1
6 1956	6 1957	12	-6.8	-4.4	-2.4	10	55.3	663.1	61.7	163.4
3 1958	12 1953	9	-4.2	-2.6	-1.9	7	75.2	677.0	56.2	161.5
3 1959	3 1961	24	-9.4	-8.8	-3.2	11	36.4	874.6	84.4	118.8
1 1964	5 1965	16	-14.8	-6.7	-9.1	11	134.4	2151.1	54.6	140.2

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
2.19	2.32	2.55	1.28	0.58	0.24	0.16	0.27	0.31	0.77	1.29	1.60	13.55
WEIGHTS.												
0.294	0.305	0.326	0.213	0.151	0.121	0.114	0.124	0.127	0.168	0.214	0.242	
MEAN MONTHLY DEFICITS.												
-0.65	-0.62	-0.65	-0.40	-0.28	-0.14	-0.10	-0.17	-0.19	-0.26	-0.41	0.53	-4.40

REGION M3 2

DROUGHT.			DEFICIT.		ENRUSH DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
4 1928	1 1931	33	-13.2	-11.6	-4.5	18	39.0	1286.4	76.7	148.0
3 1931	1 1934	34	-21.2	-12.3	-11.1	25	90.2	3066.8	62.9	148.5
12 1934	1 1936	13	-5.8	-5.6	-2.2	7	39.9	519.2	68.1	133.3
3 1937	12 1937	9	-5.1	-2.8	-2.8	7	98.5	886.5	49.3	129.9
3 1938	1 1939	10	-5.7	-3.4	-3.0	7	89.1	890.8	57.3	129.0
3 1941	3 1942	12	-11.6	-4.5	-7.4	11	165.3	1983.7	39.2	119.5
1 1943	4 1943	3	-3.3	-1.8	-1.6	2	88.8	266.5	55.3	133.3
12 1944	3 1947	27	-15.6	-10.6	-8.4	17	79.2	2138.3	76.9	176.8
5 1948	12 1949	19	-10.0	-6.1	-5.0	13	82.0	1558.2	66.3	120.1
11 1951	2 1953	15	-10.4	-6.1	-5.9	9	96.3	1444.9	65.7	166.4
11 1953	12 1954	13	-6.2	-4.9	-2.6	8	52.7	684.8	73.1	112.1
6 1956	6 1957	12	-5.8	-4.5	-2.0	9	45.0	539.9	70.9	131.1
3 1959	11 1960	20	-8.3	-6.9	-3.6	12	51.9	1038.6	74.6	125.7
12 1961	11 1962	11	-8.5	-4.0	-4.9	10	122.2	1344.2	53.5	157.2
12 1963	6 1965	18	-13.9	-7.5	-8.0	13	106.9	1924.4	63.3	140.9

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
2.69	2.44	2.83	1.51	0.47	0.31	0.17	0.21	0.28	1.16	1.80	2.34	16.21
WEIGHTS.												
0.299	0.281	0.310	0.212	0.135	0.123	0.112	0.116	0.121	0.186	0.233	0.273	
MEAN MONTHLY DEFICITS.												
-0.61	-0.49	-0.72	-0.45	-0.25	-0.21	-0.12	-0.15	-0.17	-0.30	-0.46	-0.53	-4.47

REGION M5 WESTERN PORTION

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING NET PERIOD
8 1931	11 1933	27	-21.0	-11.2	-11.1	22	99.4	2685.0	65.7	109.4
1 1935	2 1936	13	-11.8	-5.8	-7.7	9	133.7	1738.6	65.6	125.3
2 1938	12 1938	10	-6.7	-3.9	-3.9	5	100.1	1000.6	63.9	118.7
2 1941	3 1942	13	-6.6	-6.0	-2.8	8	47.3	615.5	83.2	125.5
12 1944	1 1946	13	-13.1	-6.4	-8.0	11	123.7	1608.2	57.9	132.8
4 1946	11 1947	19	-11.5	-7.1	-5.7	16	80.8	1535.8	66.8	149.8
4 1949	11 1949	7	-2.8	-1.9	-1.0	6	53.4	373.8	57.2	109.3
2 1950	11 1952	33	-16.7	-13.6	-7.5	14	54.8	1808.2	90.0	107.1
5 1953	11 1954	18	-8.4	-6.7	-3.0	16	44.6	802.8	76.8	125.5
11 1957	9 1958	10	-7.3	-4.5	-4.3	8	97.3	973.3	73.3	124.6
3 1959	11 1960	20	-10.1	-7.7	-5.1	11	66.1	1321.2	81.9	116.1
7 1961	10 1964	39	-26.6	-16.0	-13.9	27	86.5	3374.5	73.9	127.7
1 1965	5 1965	4	-6.1	-2.4	-3.7	3	154.2	616.6	54.5	130.6

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.92	3.28	2.61	1.55	0.60	0.30	0.21	0.16	0.51	1.86	3.46	4.13	22.59
WEIGHTS.												
0.308	0.274	0.238	0.182	0.132	0.116	0.111	0.109	0.127	0.199	0.284	0.320	
MEAN MONTHLY DEFICITS.												
-0.62	-0.81	-0.58	-0.42	-0.29	-0.20	-0.16	-0.12	-0.21	-0.50	-0.63	-0.64	-5.18

TABLE 14.

REGION M6 1

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1926	10 1927	21	-12.2	-7.8	-6.7	11	86.4	1813.5	77.4	159.8
12 1927	2 1929	14	-8.4	-5.8	-4.1	10	69.8	977.1	77.4	164.4
6 1930	12 1930	6	-3.5	-1.3	-2.3	4	173.8	1042.7	35.8	132.3
11 1931	4 1932	5	-5.3	-3.1	-2.8	3	90.9	454.4	73.2	118.0
2 1933	11 1933	9	-5.6	-2.9	-3.2	8	111.2	1000.7	35.4	129.6
3 1934	1 1936	22	-13.8	-7.6	-7.7	12	100.9	2219.2	64.6	112.0
4 1937	9 1938	17	-7.7	-5.5	-3.9	12	70.6	1200.1	87.4	148.6
6 1941	3 1942	9	-4.6	-3.5	-2.4	5	70.5	634.7	71.2	129.3
3 1944	1 1946	22	-14.7	-7.6	-8.1	17	106.1	2333.3	65.6	117.6
4 1946	12 1947	20	-12.6	-6.5	-7.0	16	107.5	2149.2	61.6	169.6
2 1950	3 1951	13	-8.8	-5.5	-4.6	7	84.8	1102.1	68.9	114.8
11 1951	11 1952	12	-7.1	-4.6	-3.0	9	64.3	771.9	67.9	239.9
11 1957	9 1958	10	-12.7	-4.0	-8.7	10	214.6	2145.6	40.4	120.8
3 1959	12 1960	21	-7.1	-7.1	-2.8	12	40.0	840.7	84.2	128.8
9 1961	11 1962	14	-7.8	-5.1	-3.2	11	61.6	862.8	73.8	116.2
1 1963	5 1965	28	-19.3	-11.7	-10.4	17	88.9	2488.3	76.6	140.1

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.37	3.08	2.08	1.33	0.42	0.28	0.25	0.10	0.34	1.27	2.57	3.37	18.46
WEIGHTS.												
0.319	0.300	0.236	0.186	0.127	0.118	0.116	0.106	0.122	0.182	0.267	0.319	
MEAN MONTHLY DEFICITS.												
-0.66	-0.89	-0.54	-0.41	-0.18	-0.15	-0.15	-0.05	-0.15	-0.40	-0.45	-0.57	-4.59

TABLE 15.

REGION M6 2

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1926	5 1928	28	-15.2	-11.9	-7.2	14	63.2	1685.2	82.7	146.8
10 1928	9 1929	11	-4.9	-4.6	-1.8	6	38.6	424.4	88.6	560.8
12 1931	11 1933	23	-13.1	-9.0	-5.3	18	58.5	1345.7	73.3	112.1
4 1934	2 1936	22	-12.9	-8.2	-6.6	15	80.3	1766.8	72.4	108.5
2 1938	12 1938	10	-7.1	-3.6	-3.9	9	108.3	1082.9	59.9	119.6
2 1941	8 1942	18	-9.4	-7.2	-4.7	10	64.7	1164.8	81.4	132.5
12 1944	1 1946	13	-9.8	-6.0	-5.6	9	94.4	1227.7	56.3	143.9
4 1946	11 1947	19	-11.0	-6.5	-5.8	15	89.1	1692.4	65.2	154.0
12 1948	4 1951	28	-16.7	-12.1	-7.7	18	63.2	1769.4	78.6	127.0
11 1951	10 1952	11	-8.4	-4.4	-4.6	7	104.5	1149.9	61.7	253.7
3 1954	11 1954	8	-4.2	-2.3	-1.9	8	80.4	643.1	39.0	140.0
2 1955	10 1955	8	-4.1	-2.7	-1.7	5	64.2	513.9	56.5	135.1
11 1957	9 1958	10	-6.8	-4.2	-3.1	8	74.2	742.2	72.4	114.6
4 1959	11 1960	19	-6.7	-6.5	-2.2	10	33.9	644.4	76.7	144.6
7 1961	5 1965	46	-34.4	-18.7	-19.7	30	105.3	4843.0	71.0	150.3

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.38	2.97	2.34	1.33	0.64	0.23	0.16	0.09	0.34	1.45	2.62	3.44	18.99
WEIGHTS.												
0.313	0.288	0.248	0.184	0.141	0.115	0.110	0.106	0.121	0.192	0.265	0.317	
MEAN MONTHLY DEFICITS.												
-0.52	-0.75	-0.62	-0.44	-0.31	-0.17	-0.12	-0.07	-0.17	-0.43	-0.56	-0.64	-4.79

TABLE 16.

REGION M6 3

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
10 1925	1 1928	27	-18.4	-12.1	-10.0	14	82.6	2235.8	77.2	201.1
10.1928	10 1929	12	-5.3	-5.2	-1.9	6	36.9	442.9	84.8	122.8
1 1932	11 1933	22	-13.3	-0.2	-5.9	17	64.0	1408.2	71.3	101.0
1 1935	2 1936	13	-11.2	-5.8	-7.1	10	121.2	1575.6	65.6	136.4
2 1938	3 1939	13	-10.2	-6.0	-6.4	9	107.4	1296.7	68.9	124.9
2 1941	8 1942	18	-9.0	-7.8	-3.8	10	49.0	882.5	90.3	120.2
12 1944	1 1946	13	-12.7	-6.5	-8.0	11	122.5	1592.1	61.0	152.3
4 1946	10 1948	30	-13.9	-11.9	-6.3	21	52.7	1581.0	80.7	178.7
12 1948	11 1952	47	-25.0	-20.4	-12.1	23	59.6	2803.2	88.6	160.7
4 1956	6 1957	14	-6.8	-6.0	-3.0	7	49.5	693.4	81.9	112.6
2 1959	11 1960	21	-10.2	-8.6	-4.2	11	49.1	1031.3	78.0	113.4
8 1961	6 1965	46	-39.1	-20.5	-21.7	35	105.5	4852.5	68.5	146.8

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
3.75	3.16	2.86	1.60	0.60	0.33	0.21	0.12	0.48	1.62	2.73	3.62	21.09
WEIGHTS.												
0.313	0.280	0.263	0.191	0.134	0.119	0.112	0.107	0.127	0.192	0.255	0.306	
MEAN MONTHLY DEFICITS												
-0.62	-0.75	-0.71	-0.48	-0.31	-0.23	-0.15	-0.09	-0.24	-0.42	-0.54	-0.70	-5.22

TABLE 17.

REGION M7

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1927	10 1927	9	-5.1	-2.6	-2.7	6	103.4	930.7	55.4	287.6
2 1928	11 1928	9	-6.1	-2.2	-4.0	7	181.6	1634.6	17.6	129.2
12 1931	2 1932	2	-2.3	-1.2	-1.1	1	87.3	174.7	65.9	125.2
2 1934	1 1936	23	-14.4	-7.1	-8.1	19	113.9	2619.8	56.6	129.0
3 1937	4 1938	13	-5.4	-4.4	-2.5	7	58.2	756.5	73.0	123.5
1 1941	3 1942	14	-9.3	-5.3	-4.7	12	88.6	1240.1	59.2	128.7
11 1942	3 1945	28	-14.1	-10.2	-7.8	15	76.0	2128.9	81.5	228.0
4 1946	12 1947	20	-12.6	-5.4	-7.6	16	141.5	2830.0	46.6	142.4
12 1948	3 1951	27	-12.7	-9.7	-6.9	14	70.9	1913.3	79.5	147.4
11 1951	9 1952	10	-4.6	-3.5	-1.7	7	48.2	481.5	70.5	216.9
3 1959	4 1960	13	-7.7	-4.4	-3.9	9	89.9	1169.1	59.8	120.4
7 1961	5 1965	46	-27.2	-15.4	-15.2	24	98.6	4535.9	72.0	119.3

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
2.62	2.42	1.47	0.86	0.19	0.17	0.08	0.06	0.19	0.86	1.94	2.77	13.63
WEIGHTS.												
0.331	0.313	0.229	0.175	0.117	0.115	0.107	0.105	0.117	0.176	0.271	0.344	
MEAN MONTHLY DEFICITS.												
-0.68	-0.72	-0.48	-0.30	-0.09	-0.10	-0.05	-0.04	-0.12	-0.29	-0.48	-0.54	-3.89

TABLE 18.

REGION 96

DROUGHT.			DEFICIT.		EXCESS DEFICIT.				PERCENT OF MEAN RAINFALL.	
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
1 1926	10 1927	21	-9.5	-6.3	-4.8	14	76.9	1615.3	64.0	130.6
11 1928	3 1929	4	-3.2	-1.7	-1.9	3	114.3	457.0	47.0	138.3
3 1930	11 1933	44	-22.5	-12.7	-12.6	32	98.8	4347.1	60.4	147.9
7 1935	3 1936	8	-3.9	-2.3	-2.0	4	84.6	677.1	51.6	144.2
3 1937	12 1937	9	-3.3	-2.2	-1.1	8	49.7	447.4	51.5	119.8
5 1941	2 1942	9	-4.8	-2.2	-3.0	6	137.6	1238.5	31.6	122.3
3 1944	3 1946	23	-10.5	-6.7	-5.6	15	83.6	1923.2	60.4	134.9
8 1946	4 1947	8	-4.9	-2.8	-2.1	7	77.3	618.0	57.4	145.0
6 1948	2 1950	20	-10.5	-5.6	-5.1	18	92.3	1845.2	50.0	158.1
1 1951	2 1953	25	-12.6	-7.7	-6.5	14	84.6	2114.5	61.6	164.5
5 1954	1 1955	8	-3.5	-1.7	-1.9	7	111.1	888.9	30.8	122.1
6 1956	6 1957	12	-5.4	-3.6	-2.4	9	67.3	807.5	61.7	144.4
2 1958	12 1958	10	-4.3	-2.7	-2.3	7	83.4	833.8	54.2	221.9
3 1959	3 1961	24	-6.4	-7.2	-2.0	8	27.8	667.4	85.7	165.7
8 1961	11 1962	15	-6.2	-4.2	-3.0	11	71.8	1077.2	63.7	167.3
1 1964	5 1965	16	-11.7	-5.5	-7.0	10	127.7	2042.8	56.9	156.4

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL:												
1.47	1.67	2.25	1.20	0.52	0.19	0.15	0.26	0.31	0.68	1.13	1.17	11.00
WEIGHTS:												
0.260	0.282	0.346	0.231	0.156	0.120	0.117	0.128	0.134	0.175	0.223	0.228	
MEAN MONTHLY DEFICITS:												
-0.49	-0.49	-0.53	-0.39	-0.24	-0.10	-0.09	-0.16	-0.19	-0.22	-0.32	-0.38	-3.60

TABLE 19.

REGION M 3/1

DROUGHT.			DEFICIT.		EXCESS DEFICIT.			PERCENT OF MEAN RAINFALL.		
BEGIN	END	DURATION	SUM	MEAN	TOTAL	MONTHS	Y	YxD	IN DROUGHT	IN PRECEDING WET PERIOD
12 1931	2 1932	2	- 3.2	-1.2	-2.0	2	161.9	323.7	13.7	130.1
4 1932	12 1933	20	-14.5	-6.9	-8.2	17	119.4	2387.7	37.2	143.7
12 1934	12 1935	12	-5.3	-4.7	-1.7	8	36.3	436.0	69.5	142.2
3 1937	1 1938	10	-6.9	-3.4	-3.6	9	105.3	1053.0	31.4	116.2
3 1938	11 1938	8	-4.7	-2.5	-2.4	6	99.5	796.2	29.9	164.1
11 1939	12 1940	13	-5.1	-5.1	-3.6	9	70.4	915.6	78.8	149.1
3 1941	8 1942	17	-10.0	-6.6	-5.6	9	85.0	1444.7	59.5	157.2
3 1944	1 1946	22	-13.1	-8.1	-6.8	15	83.5	1836.0	59.3	143.3
6 1946	9 1947	15	-8.3	-5.2	-4.1	12	78.3	1173.9	57.5	150.1
5 1948	12 1949	19	-13.8	-6.3	-7.8	16	122.7	2330.5	40.0	138.8
11 1951	2 1953	15	-9.6	-6.4	-4.8	9	74.9	1123.2	64.9	171.9
2 1954	1 1955	11	-5.3	-4.0	-2.1	9	51.5	566.2	65.4	120.7
5 1956	6 1957	13	-7.9	-5.0	-3.1	11	62.8	816.9	57.6	158.7
4 1958	3 1961	35	-14.6	-13.4	-5.6	21	41.4	1448.1	78.5	147.2
12 1961	11 1962	11	-8.2	-4.3	-4.5	10	105.4	1159.6	46.5	213.7
1 1964	7 1965	18	-15.4	-7.8	-8.9	13	114.9	2068.7	54.1	167.2

JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
MEAN MONTHLY RAINFALL.												
2.28	2.35	2.53	1.39	0.58	0.33	0.17	0.19	0.24	0.71	1.21	1.73	13.72
WEIGHTS.												
0.299	0.306	0.321	0.222	0.151	0.129	0.115	0.116	0.121	0.162	0.206	0.251	
MEAN MONTHLY DEFICITS.												
-0.70	-0.62	-0.72	-0.52	-0.29	-0.21	-0.14	-0.14	-0.15	-0.28	-0.41	-0.53	-4.72

TABLE 20.

RAINFALL STATIONS USED TO DETERMINE THE AVERAGE MONTHLY RAINFALL
OVER THE REGIONS.

Region No.	Station No.	Station Name.	Latitude.	Longitude
A1	475/456	Krugersdorp.	26° 07'	27° 45'
	508/406	De Wig	25° 36'	25° 44'
	508/825	Ottoshoop.	25° 45'	25° 58'
	509/695	Groot Marico	25° 35'	26° 26'
	510/308	Zwartruggens.	25° 38'	26° 41'
	510/712	Koster.	25° 52'	26° 54'
	511/477	Zandfontein	25° 57'	27° 16'
	511/855	Buffelspoort	25° 45'	27° 29'
	512/144	Nooitgedacht	25° 54'	27° 35'
	512/613	Hartebeestpoort Dam.	25° 43'	27° 51'
	513/345	Pretoria	25° 45'	28° 12'
	545/626	Dinokana	25° 26'	25° 51'
	546/525	Olifantsvlei	25° 15'	26° 18'
	548/165	Pilansberg	25° 15'	27° 06'
	548/747	Kaffirskraal	25° 27'	27° 25'
	551/281	Rooikop	25° 11'	28° 40'
	A4	401/407	Middelburg.	27° 07'
436/575		Rooipoort	26° 35'	26° 50'
436/855		Brakspruit	26° 45'	26° 59'
437/104		Potchefstroom	26° 44'	27° 04'
437/555		Hartebeestpoort	26° 45'	27° 19'
437/834		Parys	26° 54'	27° 28'
438/729		Vereeniging	26° 39'	27° 55'
472/281		Lichtenburg	26° 11'	26° 10'
473/404		Vlieger Farm	26° 14'	26° 44'
473/686		Roodekop	26° 26'	26° 53'
474/502		Welverdiend	26° 22'	27° 17'
475/370		Randfontein	26° 10'	27° 43'
475/456		Krugersdorp	26° 07'	27° 45'
475/669		Roodepoort-Maraisburg	26° 10'	27° 52'
508/261		Mafeking	25° 51'	25° 39'
508/406		De Wig	25° 36'	25° 44'
508/825		Ottoshoop	25° 45'	25° 58'
511/477	Zandfontein	25° 57'	27° 16'	

A5 /

Region No.	Station No.	Station Name.	Latitude.	Longitude
A5	588/385	Leeuwpoort Tin Mine	24°55'	27°43'
	588/406	Rooiberg	24°46'	27°44'
	588/721	Rhenosterfontein	24°31'	27°55'
	589/670	Elandspoort	24°40'	28°23'
	589/877	Groenfontein	24°37'	28°30'
	589/897	Dandaloo	24°57'	28°30'
	590/307	Nylsvlei	24°37'	28°41'
	590/361	Naboomspruit	24°31'	28°43'
	590/486	Mosdene	24°36'	28°47'
	630/826	Groenrivier	24°16'	27°28'
	631/564	Elandshoek	24°24'	27°49'
	632/297	Boekenhoutkloof	24°27'	28°10'
	633/393	Zaaiplaats	24°03'	28°44'
	633/503	Bracondale	24°23'	28°47'
	633/796	Moorddrift	24°16'	28°57'
	675/117	Derdekraal	23°57'	28°04'
A8	678/776	Haenertsburg	23°56'	29°56'
	678/883	Ramatoelaskloof	23°43'	30°00'
	679/456	Ravenshill	23°36'	30°16'
	679/508	Thabina	23°58'	30°17'
	722/301	Capesthorne	23°01'	29°41'
	722/571	Verzamelshoek	23°01'	29°50'
	722/693	Louis Trichardt	23°03'	29°54'
	722/700	Mampakuil	23°10'	29°54'
	722/721	Water Reserve	23°01'	29°55'
	723/70	Elim	23°10'	30°03'
	723/278	Gevonden	23°08'	30°12'
	766/480	Entabeni	23°00'	30°16'
	766/837	Sibasa	22°57'	30°28'
B4	398/556	Hollowaysrust	27°16'	25°49'
	398/876	Rooipoort	27°06'	26°00'
	399/241	Leeuwkop	27°01'	26°09'
	433/512	Brandwag	26°32'	25°18'
	433/791	Delareyville	26°41'	25°27'
	434/228	Doornbult	26°48'	25°38'
	434/359	Brakpan	26°59'	25°42'
	434/888	Ottosdal	26°48'	26°00'
	435/359	Klipfontein	26°59'	26°12'
	435/735	Hartebeestfontein	26°45'	26°25'
	436/575	Rooipoort	26°35'	26°50'

Region No.	Station No.	Station Name.	Latitude.	Longitude
	472/281	Lichtenburg.	26°11'	26°10'
	473/404	Vlieger Farm	26°14'	26°44'
	473/686	Roodekop	26°26'	26°53'
	510/712	Koster	25°52'	26°54'
	511/477	Zandfontein.	25°57'	27°16'
C1	589/628	Roodekuil	24°58'	28°21'
	589/867	Ludlow	24°57'	28°29'
	589/897	Dandeloo	24°57'	28°30'
	590/307	Nylsvlei	24°37'	28°41'
	590/321	Koppie Alleen	24°51'	28°41'
	590/486	Mosdene	24°36'	28°47'
	590/500	Byzonder	24°50'	28°47'
	591/125	Byzonderheid	24°35'	29°05'
	633/393	Zaeiplaats	24°03'	28°44'
	633/796	Moorddrift	24°16'	28°57'
	634/50	Witpoort	24°20'	29°02'
	634/84	Kalkfontein	24°24'	29°03'
	676/705	Swerwerskraal.	23°45'	28°54'
C2	634/131	Planknek	24°11'	29°05'
	634/140	Doornfontein	24°20'	29°05'
	677/259	Mountain View	23°49'	29°09'
	677/818	Thorneloe	23°38'	29°28'
	677/834	Pietersburg Hospital	23°54'	29°28'
	678/144	Kalkfontein	23°54'	29°35'
	678/725	Wilgeboschfontein.	23°35'	29°55'
	678/776	Haenertsburg	23°56'	29°56'
	722/653	Bultfontein	23°23'	29°52'
	722/700	Mampakuil	23°10'	29°54'
	722/749	Hasebult	23°29'	29°55'
C4	260/4	Doornplaats	29°04'	25°31'
	291/899	Katdoornput	28°59'	25°30'
	292/461	Dealesville	28°41'	25°46'
	293/106	Florisbad	28°46'	26°04'
	324/725	Nazareth House Farm	28°05'	24°55'
	325/877	Hertzogville	28°05'	25°30'
	326/344	Wolhuterskop	28°14'	25°42'
	326/670	Brand	28°10'	25°53'
	327/257	Bultfontein	28°17'	26°09'
	361/295	Christiana	27°55'	25°10'
	362/159	Bloemhof	27°39'	25°36'
	362/695	Vaalbank	27°35'	25°54'

Region No.	Station No.	Station Name	Latitude.	Longitude
	399/662	Doornplaats	27°02'	26°23'
	400/203	Bothaville	27°23'	26°37'
	401/407	Middelburg	27°07'	27°14'
C6	324/607	Warrenton	28°07'	24°51'
	324/725	Nazareth House Farm	28°05'	24°55'
	361/295	Christiana	27°55'	25°10'
	362/159	Bloemhof	27°39'	25°36'
	362/695	Vaalbank	27°35'	25°54'
	396/284	Madrid	27°14'	24°40'
	398/556	Hollowaysrust	27°16'	25°49'
	398/876	Rooipoort	27°06'	26°00'
	399/241	Leeuwkop	27°01'	26°09'
	399/662	Doornplaats	27°02'	26°23'
	431/896	Biesiesvlakte	26°56'	24°30'
	432/136	Welgelegen	26°46'	24°35'
	432/196	Progress	26°46'	24°37'
	432/387	Vryburg	26°57'	24°43'
	433/512	Brandwag.	26°32'	25°18'
	436/855	Brakspruit	26°45'	26°59'
	468/210	Fielden	26°30'	24°07'
	469/359	Peachdale	26°29'	24°42'
	470/196	Setlagodi	26°16'	25°07'
	508/261	Mafeking	25°51'	25°39'
	508/406	De Wig.	25°36'	25°44'
M1	256/453	Douglas	29°03'	23°46'
	256/638	Wimbledon Estate	29°08'	23°52'
	287/441	Griquatown	28°51'	23°15'
	288/610	Solomonsfontein	28°40'	23°51'
	288/528	Tweefontein	28°48'	23°48'
	289/102	Schmidtsdrift	28°42'	24°04'
	322/329	Papkuil	28°29'	23°41'
	323/649	Newlands	28°19'	24°22'
	323/820	Spitzkop	28°10'	24°28'
	358/349	Brandsekkfontein	27°49'	23°42'
	359/569	Knockbarragh	27°59'	24°19'
	359/808	Klein Boetsap	27°58'	24°27'
	396/284	Madrid	27°14'	24°40'
	431/896	Bieseisvlakte	26°56'	24°30'
	432/387	Vryburg.	26°57'	24°43'

Region No.	Station No.	Station Name	Latitude.	Longitude
M2	287/41	Onder Ongeluk	28°41'	23°02'
	287/441	Griquatown	28°51'	23°15'
	320/654	Wolhaarkop	28°24'	22°52'
	322/329	Papkuil	28°29'	23°41'
	357/413	Khosis	27°53'	23°14'
	358/349	Brandsiefontein	27°49'	23°42'
	392/148	Winton	27°28'	22°35'
M3/1	391/857	Dedeben	27°17'	22°29'
	392/148	Winton	27°28'	22°35'
	392/473	Diepwater	27°23'	22°46'
	393/83	Milner	27°23'	23°03'
	394/574	Bothitho	27°04'	23°50'
	467/487	Morokweng	26°07'	23°47'
M3/2	467/487	Morokweng	26°07'	23°47'
	468/210	Fielden	26°30'	24°07'
	468/318	Palmyra	26°18'	24°11'
	469/359	Peachdale	26°29'	24°42'
	469/459	Mosita	26°09'	24°46'
	470/196	Setlegodi	26°16'	25°07'
	506/386	Logaging	25°56'	24°43'
M5	548/165	Pilansberg	25°15'	27°06'
	549/130	Vaalkop	25°10'	27°35'
	549/145	Rooikoppies	25°25'	27°35'
	549/354	Kameeldrift	25°24'	27°42'
	550/545	Blaawboschkuil	25°05'	28°19'
	550/612	Kalkheuwel	25°12'	28°21'
	551/281	Rooikop	25°11'	28°40'
	634/417	Uitzicht	24°27'	29°14'
M6/1	675/117	Derdekraal	23°57'	28°04'
	675/182	Villa Nora	23°32'	28°07'
	676/705	Swerwerskraal	23°45'	28°54'
	677/188	Vulcanus	23°38'	29°07'
	677/818	Thorneloe	23°38'	29°28'
	720/727	Leipzig	23°07'	28°55'
	721/197	Bochum	23°17'	29°07'
	721/522	Redhill	23°12'	29°18'
	721/618	Waldburg	23°18'	29°21'
	721/772	Kalkfontein	23°22'	29°26'
	722/82	Legkraal	23°22'	29°33'
	722/301	Capesthorpe	23°01'	29°41'

Region No	Station No.	Station Name	Latitude.	Longitude
	722/497	Rouwput	23°17'	29°47'
	722/529	Bandolierkop	23°19'	29°48'
	722/721	Water Reserve	23°01'	29°55'
	722/749	Hasebult	23°29'	29°55'
M6/2	587/139	Middelkop	24°49'	27°05'
	629/702	Rooibokkraal	24°12'	26°54'
	630/383	Agen	24°23'	27°13'
	630/826	Groenrivier	24°16'	27°28'
	673/128	Kruispad	23°38'	27°05'
	675/182	Villa Nora	23°32'	28°07'
	717/357	Dikgatlong	23°27'	27°12'
M6/3	545/626	Dinokana	25°26'	25°51'
	546/82	Rietgat	25°22'	26°03'
	546/272	Nietverdiend	25°02'	26°10'
	546/525	Olifantsvlei	25°15'	26°18'
	547/362	Klipkuil	25°02'	26°43'
	548/165	Pilansberg	25°15'	27°06'
	549/130	Vaelkop	25°10'	27°35'
	585/528	Vleeschfontein	24°48'	26°18'
	586/441	Ganskuil	24°51'	26°45'
	587/139	Middelkop	24°49'	27°05'
	629/702	Rooibokkraal	24°12'	26°54'
	630/383	Agen	24°23'	27°13'
M7	765/7	Bandur	22°37'	29°30'
	765/707	Mutumba Ranch	22°47'	29°54'
	808/390	Bridgewater	22°30'	29°14'
	809/706	Macuville	22°16'	29°54'
	810/80	Messina	22°20'	30°03'
	812/567	Pafuri	22°27'	31°19'
S6	253/174	Marydale	29°24'	22°06'
	254/589	Niekerkshope	29°19'	22°50'
	255/202	Newyearsakraal	29°22'	23°07'
	256/453	Douglas	29°03'	23°46'
	256/638	Wimbledon Estate	29°08'	23°52'
	287/41	Onder Ongeluk	28°41'	23°02'
	287/441	Griquatown	28°51'	23°15'
	289/102	Schmidtsdrift	28°42'	24°04'
	320/654	Wolhaarkop	28°24'	22°52'
	321/110	Postmasburg	28°20'	23°04'

TABLE 21.

(a) REGION M7

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
810/060	1916	X	11-1964	7-1965	8	1129.1	I	7-1961	3-1964	32	2946.1
							II	2-1934	2-1936	24	2728.3
							III	10-1925	1-1929	39	2386.9
							IV	3-1946	3-1948	24	2303.3
							V	3-1919	3-1921	24	2289.5
765/007	1926	III	1-1963	7-1965	30	3169.0	I	12-1933	10-1936	34	3969.4
							II	3-1958	11-1962	56	3364.2
							IV	9-1943	12-1945	27	2203.3
							V	5-1946	12-1947	19	1833.6
812/567	1926	I	8-1959	6-1965	70	3565.9	II	3-1949	12-1952	45	3012.5
							III	12-1945	3-1948	27	2921.0
							IV	4-1926	11-1928	31	2549.6
							V	4-1936	12-1937	20	1786.3
765/707	1923	I	5-1961	6-1965	49	4490.9	II	11-1925	10-1927	23	2586.5
							III	5-1948	3-1951	34	2403.1
							IV	3-1946	11-1947	20	2343.6
							V	2-1934	1-1936	23	2265.3
808/390	1929	III	1-1963	7-1965	30	3408.6	I	1-1934	12-1938	59	4073.7
							II	5-1957	4-1962	59	3475.6
							IV	3-1944	1-1946	22	2067.5
							V	11-1948	3-1951	28	2049.4
809/706	1927	I	7-1961	9-1965	50	5258.6	II	3-1949	12-1952	45	3144.7
							IV	3-1934	1-1936	22	2510.6
							III	4-1946	3-1948	23	2354.1
							V	1-1940	3-1942	26	2124.3

(b) REGION: M6/I

Station No.	Start of Record	CURRENT DROUGHT					Worst PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
722/082	1924	VI	8-1963	5-1965	17	1391.2	I	10-1930	11-1936	73	4668.1
							II	5-1946	12-1947	19	2320.1
							III	1-1924	2-1926	25	2121.6
							IV	3-1944	1-1946	22	1994.4
							V	8-1926	10-1927	14	1959.1
677/188	1931	X	2-1965	7-1965	5	360.2	I	9-1931	1-1936	52	5828.8
							II	3-1944	1-1946	22	2373.3
							III	12-1948	3-1951	27	2342.7
							IV	3-1946	12-1947	21	1531.1
							V	11-1951	2-1953	15	1050.1
764/161	1931	II	1-1963	9-1965	32	3302.1	I	1-1934	10-1936	33	4025.7
							III	5-1946	3-1948	22	2237.0
							IV	3-1944	1-1946	22	1740.1
							V	9-1961	11-1962	14	1553.9
721/197	1920	II	3-1961	7-1965	49	3727.4 *	I	11-1925	10-1929	47	4635.6
							III	4-1946	11-1949	43	2109.9
							IV	2-1950	12-1952	34	1993.2
							V	12-1957	12-1960	36	1993.0
722/497	1927	IV	1-1963	10-1964	21	1921.2	I	11-1944	12-1947	37	4346.2
							II	10-1930	11-1933	37	2820.7
							III	2-1934	2-1937	36	2681.0
							V	2-1928	2-1929	12	1686.2
721/618	1920	III	8-1963	5-1965	21	2232.1	I	11-1925	3-1932	76	5654.8
							II	2-1933	1-1936	35	3174.8
							IV	12-1920	12-1923	36	2713.1
							V	3-1944	12-1945	21	1703.5
722/529	1924	VI	1-1963	5-1965	28	2001.4	I	3-1946	12-1947	21	2556.4
							II	12-1943	10-1945	22	2499.2
							III	1-1940	3-1942	26	2443.3
							IV	10-1930	11-1933	37	2407.7
							V	12-1934	11-1936	23	2053.3
721/257	1929	VII	11-1963	7-1965	17	1396.0 *	I	5-1956	12-1960	55	2785.2
							II	4-1946	11-1949	43	2510.1
							III	12-1943	1-1946	25	2507.2
							IV	2-1934	1-1936	23	2487.8
							V	1-1951	12-1952	23	1874.5

* This is the combined indexes of the 1964 and 1965 droughts

Archive material - may not reflect current procedures and policies

(b) REGION: K6/I

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (Months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
675/182	1909	III	11-1963	7-1965	20	2507.4	I	10-1925	3-1929	41	3640.9
							II	1-1913	5-1917	52	3440.7
							IV	2-1933	12-1935	34	2161.1
							V	12-1943	12-1945	24	1910.0
721/522	1926	I	2-1963	7-1965	29	2920.4	II	2-1934	1-1936	23	2308.3
							III	6-1930	3-1932	21	2098.9
							IV	4-1946	12-1947	20	2021.8
							V	4-1937	12-1938	20	1766.8
720/727	1916	II	9-1961	7-1965	46	3592.5	I	11-1925	2-1929	39	3936.4
							III	2-1933	2-1936	36	2509.2
							IV	1-1916	5-1917	16	2085.5
							V	3-1944	1-1946	22	2041.7
721/772	1912	IV	3-1961	5-1965	50	2655.2	I	2-1944	11-1947	45	3699.6
							II	2-1933	2-1936	36	3002.1
							III	1-1925	10-1929	57	2841.1
							V	4-1918	3-1921	35	2071.9

(c) Region MS/2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
630/383	1925	I	7-1961	6-1965	47	7824.8	II	8-1931	1-1934	29	2000.9
							III	4-1934	2-1936	22	1834.6
							IV	12-1944	11-1947	35	1765.9
							V	4-1949	12-1950	20	1675.8
717/357	1923	I	6-1961	6-1965	48	4813.2	II	4-1959	11-1960	19	2305.8
							III	12-1925	10-1927	22	1731.1
							IV	12-1931	11-1933	23	1723.7
							V	12-1948	12-1949	12	1618.9
673/128	1920	IX	1-1964	6-1965	17	1198.5	I	7-1921	2-1924	31	3655.1
							II	12-1931	1-1936	49	3653.6
							III	7-1961	4-1963	21	2023.4
							IV	4-1946	11-1947	19	2016.5
							V	12-1948	4-1951	28	1997.1
675/182	1909	III	11-1963	7-1965	20	2507.4	I	10-1925	3-1929	41	3640.9
							II	1-1913	5-1917	52	3440.7
							IV	2-1933	12-1935	34	2161.1
							V	12-1943	12-1945	24	1910.0

(d) Region M6/3

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
585/528	1911	IX	3-1964	6-1965	15	1506.0	I	3-1946	10-1948	31	2588.3
							II	10-1935	8-1942	34	2315.2
							III	8-1961	10-1963	26	2307.1
							IV	7-1911	11-1914	40	2272.5
							V	10-1925	1-1928	27	1797.1
586/441	1915	I	7-1961	7-1965	48	4788.6	II	10-1925	1-1928	27	2457.9
							III	3-1915	8-1917	29	2131.7
							IV	1-1950	10-1952	33	2039.7
							V	12-1944	1-1946	13	1611.3
587/139	1925	I	7-1961	6-1965	47	4737.9	II	12-1925	10-1929	46	4078.0
							III	4-1946	10-1948	30	1918.2
							IV	2-1938	12-1938	10	1643.4
							V	12-1939	8-1942	32	1567.1
546/272	1928	III	9-1961	10-1965	49	3633.4	I	4-1928	12-1933	68	4919.8
							II	10-1947	2-1954	76	3701.6
							IV	3-1934	3-1936	24	2220.3
							V	5-1945	1-1946	8	1211.5
547/362	1923	VI	2-1964	9-1965	19	1825.9	I	10-1925	2-1928	28	3144.8
							II	3-1955	6-1957	27	2380.0
							III	3-1946	4-1950	49	2047.1
							IV	4-1958	3-1960	23	2014.6
							V	2-1951	2-1952	12	2004.2

(e) Region A2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
679/508	1905	I	3-1959	10-1964	67	4881.4	II	11-1948	11-1952	48	3536.2
							III	11-1911	11-1914	36	3356.4
							IV	4-1926	7-1927	15	2182.6
							V	1-1941	3-1943	26	2114.6
679/456	1911	V	10-1961	10-1964	36	2287.1	I	12-1939	1-1946	73	6685.5
							II	3-1946	2-1950	47	3399.2
							III	11-1911	12-1914	37	3332.3
							IV	6-1925	2-1929	44	2857.1
766/837	1906	III	1-1962	5-1965	40	3893.5	I	5-1934	2-1944	117	8471.1
							II	11-1910	12-1914	49	4211.0
							IV	5-1948	12-1952	55	2422.5
							V	11-1925	2-1929	39	2323.7
766/480	1924	II	9-1961	5-1965	44	4063.8	I	12-1940	1-1946	61	5226.2
							III	10-1925	12-1928	38	2536.4
							IV	3-1937	9-1938	18	1586.6
							V	1-1935	3-1936	14	1559.7
723/278	1916	I	5-1961	5-1965	48	4681.0	II	6-1925	12-1928	42	3493.8
							III	3-1946	12-1947	21	2897.6
							IV	10-1942	10-1945	36	2441.8
							V	4-1934	2-1936	22	2126.2
723/070	1904	II	9-1961	7-1965	46	3731.1	I	11-1940	1-1946	62	5088.1
							III	3-1934	2-1939	59	3398.0
							IV	10-1925	2-1929	40	3393.0
							V	8-1949	10-1952	38	2816.6
722/721	1914	I	3-1959	5-1965	74	7260.8	II	12-1939	1-1946	73	5557.3
							III	3-1946	11-1947	20	2368.3
							IV	11-1915	4-1917	17	1986.4
							V	11-1925	7-1927	20	1672.1

(e) Region A8

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (Months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
678/883	1914	IV	3-1961	10-1964	43	2113.2	I	11-1925	11-1933	96	8607.2
							II	12-1942	3-1948	63	4286.1
							III	11-1948	12-1952	49	3964.9
							V	12-1934	2-1936	14	1671.4
722/301	1926	I	4-1959	5-1965	71	5607.3*	II	4-1959	10-1964	66	4958.5
							III	1-1941	10-1945	57	3364.3
							IV	3-1946	11-1947	20	2507.2
							V	1-1935	2-1937	25	1629.5
722/700	1924	IV	1-1963	5-1965	28	2329.6	I	1-1934	9-1938	56	4057.6
							II	10-1925	10-1927	24	2696.2
							III	11-1942	10-1945	35	2680.6
							V	3-1946	12-1947	21	2270.4
722/693	1906	II	1-1963	5-1965	28	2766.4	I	10-1940	1-1946	63	4533.0
							III	11-1911	2-1914	27	2444.6
							IV	3-1934	2-1937	35	2224.7
							V	11-1915	5-1917	18	2063.8
678/776	1906	III	10-1961	10-1964	36	3369.5	I	1-1940	2-1945	61	7542.3
							II	5-1948	2-1953	57	3452.2
							IV	5-1945	3-1948	34	2731.0
							V	10-1925	2-1929	40	2284.5
722/571	1916	II	9-1961	5-1965	44	3944.3	I	1-1941	1-1946	60	4820.8
							III	11-1925	11-1928	36	2878.5
							IV	3-1946	3-1948	24	2329.5
							V	1-1934	3-1936	26	2166.1

* This is the combined index of the 1964 and 1965 droughts

(f) Region A5

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
633/503	1913	I	7-1961	5-1965	43	4111.7*	II	10-1925	9-1929	47	3635.7
							III	10-1950	12-1952	35	2750.2
							IV	2-1934	2-1936	24	2591.0
							V	5-1913	11-1916	42	2653.0
633/796	1919	III	3-1961	5-1965	30	3093.7*	I	10-1925	9-1929	47	4573.8
							II	3-1949	2-1953	47	3870.2
							IV	2-1934	2-1936	24	2133.6
							V	4-1937	12-1938	20	1581.9
588/406	1908	II	2-1962	10-1964	32	3112.7	I	12-1944	10-1948	46	3946.5
							III	3-1934	2-1936	23	2942.6
							IV	1-1930	9-1933	44	2597.5
							V	6-1911	10-1914	40	2529.1
588/721	1918	I	1-1963	5-1965	28	3792.5	II	8-1931	1-1936	53	3562.8
							III	1-1950	2-1953	37	2973.1
							IV	2-1959	11-1960	21	2054.0
							V	10-1925	2-1927	16	2003.2
675/117	1920	III	2-1963	5-1965	27	3059.5	I	11-1956	10-1958	23	3215.2
							II	10-1925	11-1928	37	3110.1
							IV	3-1944	1-1946	22	2494.0
							V	2-1949	10-1952	44	2205.9
590/486	1921	XVI	12-1964	5-1965	5	305.8	I	4-1934	1-1936	21	3502.2
							II	2-1950	2-1953	36	2807.5
							III	10-1925	11-1928	37	2721.3
							IV	1-1941	3-1943	26	2315.3
							V	5-1930	11-1933	42	2278.2
588/385	1913	II	1-1961	7-1965	54	3863.1	I	5-1930	1-1937	80	5084.0
							III	4-1923	2-1929	70	2780.7
							IV	11-1956	11-1958	24	1393.2
							V	3-1949	12-1951	33	1388.2

* This is the combined indexes of the 1964 and 1965 droughts.

(g) Region CI

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
590/321	1920	II	2-1962	5-1965	30	3589.9	I	10-1925	1-1931	63	4086.9
							III	6-1950	10-1952	28	3075.0
							IV	8-1931	10-1933	26	2836.0
							V	3-1934	2-1936	23	2057.0
589/628	1908	II	7-1961	5-1965	43	3715.9*	I	7-1911	5-1917	70	5955.2
							III	4-1949	2-1953	46	3470.2
							IV	12-1944	12-1947	36	2811.4
							V	8-1931	11-1933	27	1624.7
550/612	1914	I	1-1962	5-1965	37	4949.7*	II	3-1949	2-1953	47	2653.3
							III	12-1915	5-1917	17	2593.3
							IV	18-1931	11-1933	27	2339.1
							V	10-1925	12-1926	19	1871.1
591/125	1918	XV	11-1963	10-1964	11	539.0	I	12-1948	12-1952	48	4572.1
							II	12-1925	3-1929	39	2559.7
							III	4-1918	2-1921	34	2353.5
							VI	11-1943	12-1945	25	2076.9
							V	1-1941	3-1942	14	1736.0
589/867	1921	II	2-1961	7-1965	50	4708.2*	I	11-1927	11-1933	72	5095.3
							III	12-1948	2-1952	38	2722.1
							IV	1-1935	2-1936	13	1680.9
							V	10-1925	1-1927	15	1517.4
634/417	1923	VI	1-1963	10-1964	21	2034.7	I	8-1930	12-1932	20	2967.6
							II	11-1951	11-1953	24	2258.5
							III	11-1957	11-1958	12	2122.9
							IV	3-1944	1-1946	22	2074.6
							V	12-1925	4-1928	28	2046.5
550/545	1911	II	2-1963	5-1965	24	2692.3*	I	6-1911	10-1914	40	4269.5
							III	5-1945	11-1952	42	2528.0
							IV	1-1925	11-1926	22	2450.9
							V	8-1931	11-1933	27	2121.3

* This is the combined index of the 1964 and 1965 droughts.

(g) Region CI

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
634/050	1925	I	1-1961	10-1964	48	4269.5	II	12-1948	3-1951	27	1934.3
							III	4-1946	11-1947	19	1935.4
							IV	4-1944	1-1946	21	1935.2
							V	8-1930	1-1933	20	1866.1
590/500	1925	III	1-1964	12-1965	20	1826.4*	I	4-1934	1-1946	141	9785.9
							II	5-1926	1-1931	56	3863.7
							IV	9-1931	11-1933	26	1800.1
							V	4-1946	12-1947	20	1134.0
676/705	1926	VII	1-1961	11-1962	22	1419.7	I	1-1926	2-1929	37	2813.5
							II	6-1930	1-1933	31	2613.3
							III	3-1946	11-1947	20	2532.4
							IV	5-1949	4-1951	23	2336.0
							V	2-1934	1-1936	23	2231.6
634/084	1912	I	5-1961	6-1965	45	4113.6	II	9-1931	11-1933	26	3393.4
							III	2-1950	11-1952	33	3079.6
							IV	11-1956	9-1958	22	2557.0
							V	4-1946	10-1948	30	2482.2
589/897	1924	I	2-1961	7-1965	50	5751.4*	II	11-1929	11-1933	43	3558.2
							III	12-1948	2-1952	38	2661.8
							IV	5-1934	1-1936	20	1991.5
							V	4-1946	12-1947	20	1977.5

* This is the combined index of the 1964 and 1965 droughts

(h) Region C2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
634/084	1912	I	5-1961	6-1965	48	4113.6	II	9-1931	11-1933	26	3393.4
							III	2-1950	11-1952	33	3079.6
							IV	11-1956	9-1958	22	2557.0
							V	4-1946	10-1948	30	2482.0
722/653	1924	I	1-1961	5-1965	52	4306.6	II	3-1958	11-1960	32	2481.3
							III	2-1946	11-1947	21	2087.3
							IV	1-1951	1-1953	24	2053.6
							V	12-1925	10-1927	22	2022.3
677/834	1906	XVIII	1-1963	6-1963	5	413.3	I	11-1925	3-1929	40	3397.6
							II	2-1950	11-1953	45	3283.0
							III	3-1934	11-1936	32	2638.4
							IV	12-1955	8-1958	32	2327.3
							V	4-1944	1-1946	21	2150.4
677/818	1913	VI	5-1962	10-1964	29	1820.9	I	6-1930	12-1932	30	2616.8
							II	3-1944	10-1945	19	2546.3
							III	11-1915	5-1917	18	2535.0
							IV	5-1946	1-1948	20	2248.7
							V	2-1934	1-1937	35	2211.1
722/749	1925	I	9-1961	6-1965	45	4507.0	II	12-1939	4-1943	40	2753.5
							III	6-1950	1-1953	31	2366.7
							IV	10-1943	1-1946	27	2136.6
							V	11-1925	10-1927	23	2078.6
634/140	1926	I	3-1961	10-1964	43	4280.7	II	1-1926	9-1929	44	3042.0
							III	3-1949	11-1952	44	3033.1
							IV	7-1941	3-1943	20	1897.4
							V	2-1934	1-1937	35	1714.5
677/255	1921	IV	1-1963	10-1964	21	1892.4	I	1-1925	2-1929	40	3346.5
							II	3-1933	1-1936	34	2430.2
							III	9-1943	1-1946	28	1892.4
							V	9-1931	12-1932	15	1823.8
678/776	1906	III	10-1961	10-1964	36	3369.5	I	1-1940	2-1943	61	7542.3
							II	5-1948	2-1953	57	3452.2
							IV	5-1945	3-1948	34	2731.0
							V	10-1925	2-1929	40	2284.5

(h) Region C2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
678/144	1911	III	9-1961	10-1964	37	3375.3	I	2-1949	11-1952	45	4220.1
							II	4-1944	11-1948	55	3813.5
							IV	4-1926	2-1930	46	3188.0
							V	11-1915	11-1916	12	1885.1
678/725	1906	VI	1-1963	10-1964	21	1357.0	I	12-1939	3-1948	99	9132.1
							II	11-1925	11-1933	96	5700.7
							III	5-1948	1-1953	56	5206.5
							IV	11-1911	12-1914	37	2676.2
							V	12-1915	11-1916	11	1604.2
634/131	1906	XIV	12-1963	10-1964	10	671.4	I	9-1931	2-1936	53	3741.2
							II	11-1925	9-1929	46	3615.4
							III	7-1911	11-1914	40	3282.4
							IV	5-1949	11-1952	42	2860.0
							V	11-1957	11-1959	24	2742.9

(i) Region A1

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Droaght Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
512/613	1921	III	2-1964	5-1965	15	2113.9	I	4-1930	11-1933	43	3991.2
							II	1-1961	10-1963	33	3345.0
							IV	12-1944	12-1946	24	1912.3
							V	10-1925	1-1928	29	1683.4
512/144	1915	III	7-1961	6-1965	47	2631.2	I	9-1930	11-1933	38	3357.5
							II	2-1919	1-1923	47	3036.9
							IV	11-1944	1-1946	14	2246.6
							V	10-1925	1-1928	27	2105.9
548/165	1915	I	7-1961	8-1965	40	3658.5	II	3-1915	11-1917	32	3084.2
							III	5-1946	10-1948	29	2936.7
							IV	5-1931	11-1933	30	2955.7
							V	2-1959	11-1960	21	1696.9
548/747	1911	I	1-1961	6-1965	50	4039.5*	II	4-1930	11-1933	43	2991.7
							III	3-1946	1-1949	34	2484.6
							IV	10-1925	1-1928	27	2256.5
							V	3-1912	11-1914	32	1996.7
545/626	1905	II	3-1963	6-1965	27	2483.1	I	7-1911	11-1914	40	3622.4
							III	10-1925	1-1928	27	2472.2
							IV	6-1930	11-1933	41	2415.2
							V	2-1941	3-1942	13	2345.0
510/308	1916	VIII	12-1963	7-1965	19	1134.7	I	12-1929	11-1933	47	3854.7
							II	10-1925	1-1928	27	2418.3
							III	12-1936	12-1938	24	2388.6
							IV	3-1922	3-1924	24	1662.2
							V	12-1944	1-1946	13	1649.8
511/477	1905	I	2-1959	7-1965	77	5170.0	II	3-1931	11-1933	32	3414.3
							III	4-1946	9-1949	41	2745.7
							IV	6-1912	8-1914	26	2257.5
							V	12-1925	1-1928	25	2063.2
510/712	1911	III	7-1961	7-1965	48	3217.0	I	1-1911	11-1914	46	4288.4
							II	3-1915	11-1917	32	3283.5
							IV	12-1936	12-1938	24	2119.2
							V	2-1931	11-1933	33	1948.0

* This is the combined index of the 1964 and 1965 droughts

(j) Region M5

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
550/612	1914	I	1-1962	5-1965	37	4949.7*	II	3-1949	2-1953	47	2653.3
							III	12-1915	5-1917	17	2593.3
							IV	8-1931	11-1933	27	2339.1
							V	10-1925	12-1926	14	1871.1
634/417	1923	VI	1-1963	10-1964	21	2034.7	I	8-1930	12-1932	28	2967.6
							II	11-1951	11-1953	24	2258.5
							III	11-1957	11-1958	12	2122.0
							IV	3-1944	1-1946	22	2074.6
							V	12-1925	4-1928	28	2046.5
649/130	1925	I	11-1961	5-1965	42	3705.9	II	10-1957	11-1960	37	2559.8
							III	4-1953	12-1954	20	2127.2
							IV	9-1930	11-1933	38	2019.4
							V	1-1935	2-1936	13	1618.0
551/281	1925	III	12-1962	7-1963	30	2426.7*	I	12-1948	11-1950	23	2990.8
							II	10-1925	9-1928	35	2630.3
							IV	3-1930	9-1932	30	2075.2
							V	4-1946	11-1947	19	1863.6
549/354	1930	I	3-1958	11-1964	80	5816.5	II	4-1930	11-1932	31	3299.2
							III	12-1943	3-1947	39	2997.5
							IV	2-1933	2-1935	24	2297.8
							V	2-1937	12-1937	10	1401.9

* This is the combined index* of the 1964 and 1965 droughts.

(k) Region A4

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
474/502	1914	XII	11-1964	7-1965	8	1120.5	I	3-1955	4-1959	49	3655.6
							II	12-1939	4-1943	40	2865.3
							III	2-1919	12-1922	46	2380.3
							IV	2-1931	11-1933	33	2131.5
							V	12-1944	1-1947	25	2117.4
401/407	1926	V	8-1963	6-1965	22	1858.8	I	2-1958	11-1962	57	4532.7
							II	12-1944	7-1949	55	3621.0
							III	12-1931	11-1933	23	2258.4
							IV	4-1926	1-1929	33	1935.4
438/729	1912	XIV	11-1964	5-1963	6	902.1	I	6-1912	11-1914	29	2648.6
							II	9-1931	11-1933	27	2778.7
							III	1-1935	5-1936	16	2577.4
							IV	8-1927	4-1929	26	2187.2
							V	3-1923	2-1924	11	1835.8
472/281	1904	III	12-1963	6-1965	18	2293.8	I	5-1947	11-1949	30	2469.8
							II	5-1954	10-1956	29	2405.8
							IV	8-1950	10-1952	26	2159.4
							V	2-1937	12-1938	22	2063.3
436/575	1921	III	7-1963	11-1965	28	2315.8	I	7-1925	10-1927	27	2746.4
							II	5-1931	11-1933	30	2512.5
							IV	3-1923	9-1924	18	2237.3
							V	12-1944	1-1947	25	2186.3
437/104	1903	I	1-1961	6-1965	53	3812.3	II	12-1944	12-1947	36	2961.0
							III	7-1925	9-1928	38	2760.5
							IV	6-1931	11-1933	29	2423.1
							V	5-1912	10-1914	29	2199.7
437/555	1926	IX	12-1963	6-1965	18	986.2	I	12-1944	11-1947	35	3412.2
							II	I 5-1931	11-1933	30	2711.9
							III	4-1926	9-1928	29	2008.1
							IV	12-1936	12-1938	24	1808.2
							V	1-1935	2-1936	13	1647.5
436/855	1917	VII	2-1964	6-1965	16	1376.5	I	5-1930	11-1933	42	3799.4
							II	7-1950	1-1955	54	3256.2
							III	12-1944	12-1946	24	2982.9
							IV	7-1925	1-1928	30	2586.3
							V	5-1948	3-1950	22	2279.0

(1) Region B4

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
434/888	1912	III	2-1963	5-1965	27	2557.9	I	4-1930	11-1933	43	4175.9
							II	11-1913	10-1916	35	2719.8
							IV	2-1959	2-1962	36	2477.3
							V	12-1948	3-1950	15	2203.1
435/359	1913	XIII	12-1963	7-1965	19	1204.0	I	1-1919	2-1921	25	3236.8
							II	3-1915	11-1917	32	2837.5
							III	7-1925	9-1926	14	2266.1
							IV	3-1923	9-1924	18	2232.2
							V	12-1931	11-1933	23	2105.3
435/735	1916	VI	12-1963	7-1965	15	1989.9*	I	1-1940	12-1942	35	3566.7
							II	3-1923	2-1925	23	2446.8
							III	5-1931	11-1933	30	2415.1
							IV	12-1946	12-1949	36	2369.4
							V	11-1951	1-1955	38	2184.0
434/359	1923	II	7-1963	6-1965	23	2052.0	I	11-1944	12-1947	37	2469.7
							III	1-1959	2-1961	25	2020.8
							IV	3-1941	12-1942	21	1970.2
							V	5-1930	10-1932	29	1866.0
434/228	1915	V	12-1961	5-1965	41	1878.7	I	1-1958	4-1961	39	3143.2
							II	3-1941	4-1943	25	2291.2
							III	11-1951	1-1955	38	2204.3
							IV	12-1944	2-1947	26	1908.0
398/876	1911	I	1-1961	7-1965	54	4686.3	II	11-1944	12-1947	37	3090.0
							III	3-1941	4-1943	25	2545.4
							IV	6-1925	8-1928	38	2303.2
							V	12-1939	10-1940	10	2115.5

* This is the combined index of the 1964 and 1965 droughts.

(1) Region B4

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
473/686	1905	XI	12-1963	5-1965	13	1096.4	I	1-1919	12-1922	47	4404.1
							II	4-1930	11-1933	43	4337.3
							III	12-1925	1-1928	25	3051.7
							IV	4-1946	10-1949	42	2857.0
							V	6-1912	11-1914	29	2171.6
399/241	1913	XIV	2-1965	7-1965	5	549.4	I	6-1921	8-1924	33	4468.4
							II	3-1931	11-1933	32	3026.8
							III	6-1925	9-1926	15	2731.1
							IV	2-1918	1-1920	23	2219.8
							V	1-1913	1-1915	24	2043.9
433/512	1915	VI	7-1963	7-1965	24	1773.2	I	3-1941	4-1943	25	2961.7
							II	6-1921	1-1923	19	2813.5
							III	10-1925	2-1928	28	2634.2
							IV	12-1944	10-1947	34	2258.0
							V	3-1931	12-1933	33	2093.4
398/556	1906	I	1-1961	5-1965	52	3180.8	II	2-1951	12-1954	46	3041.0
							III	12-1944	9-1947	33	2413.2
							IV	3-1941	4-1943	25	2360.5
							V	12-1913	10-1916	34	2293.9
433/791	1923	III	7-1963	7-1965	20	3010.6*	I	12-1944	12-1949	60	4124.4
							II	3-1941	9-1943	30	3396.3
							IV	10-1925	1-1928	27	2293.4
							V	2-1931	12-1933	34	2161.5

* This is the combined index of the 1964 and 1965 droughts.

(m) Region C4

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
326/670	1920	VII	12-1963	5-1965	17	1566.2	I	12-1931	11-1933	23	3037.1
							II	3-1937	2-1939	23	2135.1
							III	6-1951	10-1952	16	2059.8
							IV	4-1954	12-1955	20	1863.3
							V	5-1948	12-1949	19	1774.9
326/344	1926	X	1-1964	3-1965	14	967.0	I	3-1937	7-1939	28	2636.1
							II	2-1928	2-1931	36	2457.4
							III	12-1939	2-1942	26	2350.9
							IV	12-1931	11-1933	23	2184.9
							V	5-1948	12-1949	19	2175.9
327/257	1919	VII	12-1963	7-1965	19	1907.8	I	4-1946	12-1949	44	4157.7
							II	4-1940	8-1942	28	2513.3
							III	3-1937	1-1939	22	2245.6
							IV	1-1932	11-1933	22	2138.5
							V	6-1925	12-1926	18	2012.1
400/203	1906	XI	12-1963	5-1965	17	1411.2	I	3-1958	11-1961	44	4655.3
							II	2-1948	12-1951	46	3338.1
							III	2-1930	11-1933	45	3003.5
							IV	6-1925	3-1929	45	2869.1
							V	3-1923	3-1925	24	2722.7
291/899	1914	II	5-1963	7-1965	26	2557.2	I	2-1944	3-1948	49	3499.9
							III	6-1948	4-1950	22	2440.4
							IV	12-1931	11-1933	23	2402.8
							V	10-1925	1-1928	27	1330.2
260/004	1911	V	5-1963	5-1965	24	2164.0	I	4-1920	11-1922	31	2703.3
							II	12-1931	11-1933	23	2435.3
							III	12-1936	9-1940	45	2415.9
							IV	5-1948	3-1950	22	2411.7
325/877	1925	VIII	9-1960	4-1961	7	1526.0	I	7-1935	1-1939	42	2941.8
							II	6-1951	1-1955	43	2579.1
							III	3-1939	11-1940	20	1919.1
							IV	12-1931	11-1933	23	1905.0
							V	6-1925	12-1926	18	1620.0

(m) Region C4

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
362/695	1921	VIII	12-1963	6-1965	14	1744.8	I	6-1925	5-1929	47	3855.1
							II	2-1922	9-1924	31	2587.5
							III	12-1931	11-1933	23	2169.1
							IV	3-1938	12-1940	33	1939.0
							V	3-1941	2-1942	11	1873.5
293/106	1926	III	12-1963	6-1965	14	1771.1#	I	12-1931	11-1933	23	3153.6
							II	5-1948	4-1950	23	2582.7
							IV	3-1944	1-1946	22	1617.2
							V	5-1951	7-1952	14	1611.3

(n) Region G6

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
433/512	1915	VI	7-1963	7-1965	24	1773.2	I	3-1941	4-1943	25	2961.7
							II	6-1921	1-1923	19	2813.5
							III	10-1925	2-1928	28	2634.2
							IV	12-1944	10-1947	34	2288.0
							V	3-1931	12-1933	33	2093.4
432/136	1919	VIII	12-1963	8-1965	20	1295.0	I	3-1951	10-1955	55	3531.5
							II	6-1925	12-1927	30	3627.4
							III	4-1920	1-1923	33	3271.1
							IV	10-1940	3-1942	17	1949.3
							V	5-1958	3-1961	34	1682.9
432/387	1902	I	2-1963	5-1965	27	3237.7	II	7-1925	9-1926	14	2441.4
							III	3-1910	2-1912	23	2341.2
							IV	6-1921	1-1923	19	2157.0
							V	3-1915	10-1916	19	2040.8
508/406	1916	I	8-1961	6-1965	44	4358.0*	II	5-1930	11-1933	42	3268.5
							III	10-1925	12-1927	26	2624.6
							IV	12-1918	2-1921	26	2420.6
							V	6-1921	1-1923	19	1989.4
435/359	1913	XIII	12-1963	7-1965	19	1204.0	I	1-1919	2-1921	25	3235.8
							II	3-1915	11-1917	32	2837.5
							III	7-1925	9-1926	14	2266.1
							IV	3-1923	9-1924	18	2232.2
							V	12-1931	11-1933	23	2105.3
470/196	1911	V	2-1963	7-1965	25	2140.6*	I	5-1921	2-1923	21	2937.4
							II	5-1913	11-1914	18	2862.3
							III	3-1941	4-1943	25	2494.5
							IV	6-1925	1-1928	31	2311.8
432/196	1916	VIII	12-1963	9-1965	21	1138.4	I	4-1921	3-1924	35	2949.0
							II	7-1925	1-1928	30	2840.1
							III	11-1951	12-1954	37	2643.7
							IV	3-1941	12-1942	21	2449.6
							V	12-1931	1-1934	25	1844.0

* This is the combined index of the 1964 and 1965 droughts.

(n) Region 06

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
399/241	1913	XIV	2-1965	7-1965	5	549.4	I	6-1921	8-1924	38	4469.4
							II	3-1931	11-1933	32	3026.8
							III	6-1925	9-1926	15	2731.1
							IV	2-1918	1-1920	23	2219.8
							V	1-1913	1-1915	24	2043.9
399/662	1911	III	5-1962	7-1965	38	2883.1	I	4-1930	11-1933	43	3775.8
							II	4-1940	3-1943	35	3186.4
							IV	7-1925	3-1929	44	2317.7
							V	3-1937	2-1939	23	2198.6
431/896	1925	VII	12-1963	5-1965	17	1406.5	I	7-1925	1-1928	30	3011.5
							II	11-1944	4-1947	29	2149.6
							III	2-1951	10-1952	20	1976.5
							IV	4-1928	1-1931	33	1518.0
							V	4-1932	11-1933	19	1465.7
396/813	1927	VI	12-1963	8-1965	20	1591.6	I	1-1927	2-1932	61	5380.1
							II	3-1930	1-1941	22	2417.2
							III	4-1937	12-1938	20	2165.3
							IV	1-1935	2-1936	13	1344.2
							V	1-1941	2-1942	11	1616.4
324/607	1911	VI	12-1963	6-1965	18	1521.4	I	2-1944	3-1948	49	2768.0
							II	1-1915	2-1917	25	2373.1
							III	6-1925	11-1926	17	1927.5
							IV	4-1920	11-1921	19	1735.0
							V	5-1948	3-1950	22	1678.4
362/159	1904	XI	12-1963	10-1964	10	1401.2	I	6-1951	1-1955	43	3678.5
							II	6-1921	3-1924	33	2560.6
							III	4-1936	1-1939	33	2258.9
							IV	5-1948	2-1950	21	2203.7
							V	12-1931	11-1933	23	1943.0
508/261	1903	VII	12-1963	7-1965	17	1797.6*	I	9-1909	11-1914	62	4802.8
							II	6-1921	9-1924	30	3468.2
							III	3-1944	1-1946	22	3298.1
							IV	1-1930	12-1932	35	2944.5
							V	6-1948	4-1951	34	2687.1

* This is the combined index of the 1964 and 1965 droughts

(n) Region C6

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
361/255	1921	III	1-1964	9-1965	20	2083.8	I	2-1951	1-1954	35	2399.3
							II	2-1944	1-1946	23	2100.1
							IV	3-1923	9-1924	18	1762.7
							V	7-1925	10-1926	15	1727.2
469/359	1928	V	1-1964	8-1965	19	1666.5	I	11-1951	12-1954	37	4507.0
							II	3-1941	4-1943	25	2888.4
							III	3-1931	1-1934	34	2549.4
							IV	3-1944	11-1945	20	1789.7
324/725	1917	V	12-1963	8-1965	16	1798.0*	I	4-1917	2-1920	34	2964.4
							II	12-1931	11-1933	23	2607.3
							III	6-1925	1-1928	31	2538.1
							IV	11-1944	12-1947	37	2170.8

* This is the combined index of the 1964 and 1965 droughts.

(o) Region M1

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
396/284	1919	IX	1-1964	5-1965	16	1330.7	I	4-1920	1-1923	33	4196.7
							II	2-1951	12-1954	46	3616.3
							III	7-1925	12-1927	29	2055.1
							IV	12-1931	11-1933	23	1748.0
							V	3-1937	10-1938	19	1585.4
432/387	1902	I	2-1963	5-1965	27	3237.7	II	7-1925	9-1926	14	2441.4
							III	3-1910	2-1912	23	2341.2
							IV	6-1921	1-1923	19	2167.0
							V	3-1915	10-1916	19	2040.8
288/160	1921	VII	1-1964	8-1965	19	1641.4	I	3-1931	11-1933	32	3709.3
							II	2-1944	2-1948	48	3141.5
							III	7-1925	10-1927	27	3084.7
							IV	2-1928	1-1931	35	2221.9
							V	4-1951	11-1953	31	1941.4
359/569	1916	VI	12-1963	9-1965	17	1720.2	I	4-1921	12-1924	44	3739.9
							II	2-1944	6-1947	40	2716.7
							III	7-1925	12-1927	29	2233.7
							IV	5-1948	2-1950	21	1969.9
							V	12-1931	4-1934	26	1808.3
359/808	1916	VI	12-1963	5-1965	17	1900.2	I	12-1918	2-1921	21	3614.0
							II	4-1921	2-1923	22	2173.6
							III	2-1944	1-1946	23	2104.3
							IV	5-1948	2-1950	21	2082.4
							V	2-1951	10-1953	32	1482.6
323/820	1921	VII	5-1963	8-1965	27	1652.7	I	7-1925	7-1927	24	3231.2
							II	3-1946	12-1947	21	2668.7
							III	12-1931	12-1935	48	2323.6
							IV	5-1948	3-1950	22	2220.6
							V	6-1921	1-1923	19	2020.6
288/528	1920	VII	12-1963	8-1965	20	1605.7	I	3-1944	3-1948	48	3349.6
							II	10-1950	2-1953	28	2905.8
							III	3-1933	11-1933	32	2398.1
							IV	9-1925	10-1927	26	1910.7
							V	5-1948	3-1950	22	1745.1

(c) Region M1

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
322/329	1920	IV	1-1964	8-1965	19	2352.1	I	4-1928	11-1933	67	4951.9
							II	7-1925	10-1927	27	2935.2
							III	6-1956	4-1960	46	2848.1
							V	6-1951	12-1953	30	2315.9
287/441	1884	VII	1-1964	5-1965	16	1849.5	I	11-1913	10-1916	35	3409.0
							II	3-1931	11-1930	32	3236.7
							III	6-1921	1-1923	19	2374.0
							IV	8-1925	10-1927	26	2324.7
							V	4-1951	2-1953	22	2181.3
323/649	1885	X	12-1963	5-1965	17	1769.5	I	3-1944	2-1950	71	5439.7
							II	6-1909	2-1912	32	3815.5
							III	3-1930	11-1933	44	3204.9
							IV	4-1920	1-1923	33	3195.3
							V	6-1925	12-1927	30	2896.1

(p) Region M2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
393/083	1931	I	1-1964	12-1965	23	2527.5	II	5-1948	2-1950	21	1951.6
							III	3-1944	1-1946	22	1947.5
							IV	1-1958	11-1960	34	1855.5
							V	4-1932	12-1933	20	1835.3
391/857	1931	VI	1-1964	8-1965	19	1402.8	I	1-1948	12-1949	23	2561.1
							II	4-1932	12-1933	20	2465.9
							III	2-1944	1-1946	23	1853.3
							IV	3-1941	9-1942	18	1734.1
							V	4-1958	3-1961	35	1597.9
287/441	1884	VII	1-1964	5-1965	16	1849.5	I	11-1913	10-1916	35	3409.0
							II	3-1931	11-1933	32	3246.7
							III	6-1921	1-1923	19	2374.0
							IV	8-1925	10-1927	26	2324.7
							V	4-1951	2-1953	22	2181.3
358/349	1927	I	1-1964	7-1965	18	2960.6	II	2-1947	3-1950	37	2631.6
							III	4-1932	12-1933	20	1927.2
							IV	6-1951	2-1953	20	1911.4
							V	3-1944	1-1946	22	1738.1
357/413	1918	XI	1964	5-1965	16	1043.1	I	5-1932	1-1937	56	4486.6
							II	7-1925	10-1927	27	2795.5
							III	5-1921	1-1923	20	2427.3
							IV	7-1951	12-1953	29	2091.0
							V	3-1941	11-1943	32	1960.5

(q) Region M3/1

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
457/487	1911	VI	1-1964	8-1965	19	1632.0	I	3-1920	2-1923	35	3272.4
							II	10-1925	1-1931	63	3134.3
							III	5-1931	12-1933	31	2944.3
							IV	2-1915	10-1916	20	2251.7
							V	12-1944	9-1947	33	2161.3
393/083	1931	I	1-1964	12-1965	23	2527.5	II	5-1948	2-1950	21	1951.6
							III	3-1944	1-1946	22	1947.5
							IV	1-1958	11-1960	34	1855.5
							V	4-1932	12-1933	20	1835.3
392/473	1911	II	1-1964	8-1965	19	2242.7	I	4-1932	12-1933	20	2287.0
							III	5-1948	3-1950	22	1866.1
							IV	3-1937	1-1930	22	1856.1
							V	2-1944	1-1946	23	1844.0
392/148	1927	VIII	1-1964	8-1965	19	1371.5	I	5-1948	12-1949	19	2634.1
							II	8-1951	1-1955	41	2388.1
							III	4-1932	11-1933	19	2224.1
							IV	4-1928	1-1931	33	2128.2
							V	2-1944	1-1946	23	1923.4

(r) Region M3/2

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
469/459	1912	VI	12-1963	5-1965	17	1684.5	I	7-1912	9-1916	50	4389.7
							II	5-1945	12-1949	55	2883.0
							III	4-1930	11-1933	43	2816.5
							IV	3-1941	4-1943	25	2658.3
							V	5-1921	2-1923	21	1837.5
468/210	1928	VIII	12-1963	8-1965	20	1403.7	I	11-1951	11-1955	48	2807.4
							II	5-1931	12-1933	31	2771.2
							III	8-1961	11-1962	15	2170.0
							IV	5-1948	12-1949	19	2130.7
							V	12-1928	1-1931	25	1870.4
394/574	1931	I	12-1963	8-1965	20	2345.0	II	12-1931	12-1933	24	2029.5
							III	11-1957	12-1959	25	2006.2
							IV	8-1944	9-1947	37	1762.0
							V	11-1951	1-1954	26	1657.9
467/487	1911	VI	1-1964	8-1965	19	1632.0	I	3-1920	2-1923	35	3272.4
							II	10-1925	1-1931	63	3134.3
							III	5-1931	12-1933	31	2944.3
							IV	2-1915	10-1916	20	2251.7
							V	12-1944	9-1947	33	2161.3
468/318	1914	VII	12-1963	5-1965	17	1563.7	I	3-1920	1-1923	34	2909.6
							II	3-1941	10-1942	19	2318.4
							III	9-1961	11-1962	14	1315.7
							IV	2-1915	2-1917	24	1738.7
							V	3-1931	11-1933	32	1698.1
506/386	1914	VII	12-1963	7-1965	19	1328.3	I	2-1929	3-1935	13	9103.3
							II	6-1921	9-1924	39	2854.0
							III	10-1925	12-1927	26	2220.8
							IV	3-1941	8-1942	17	1664.1
							V	3-1915	10-1916	19	1610.0

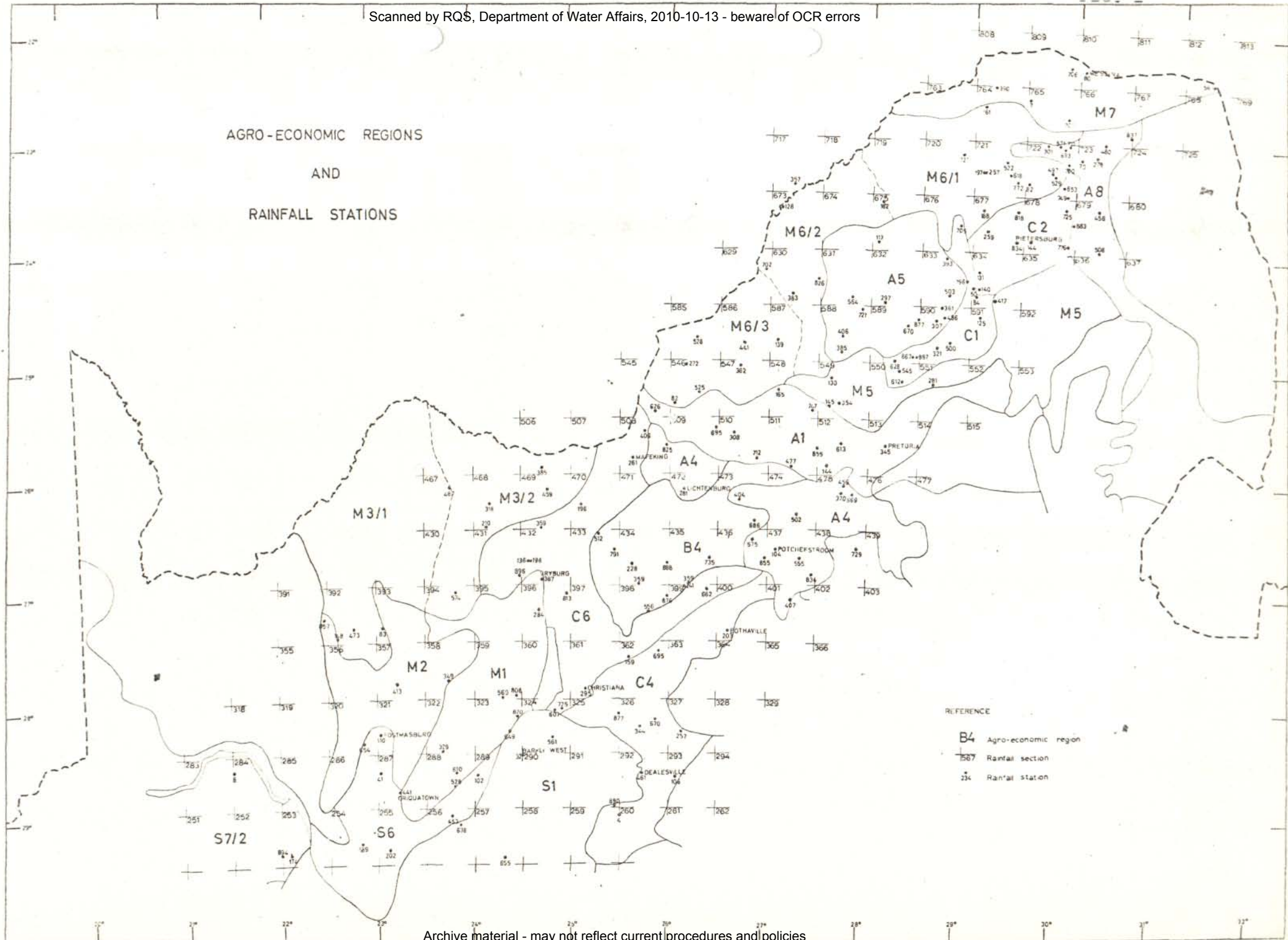
(s) Region 56											
Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
287/041	1926	V	1-1964	5-1965	16	1405.5	I	3-1931	11-1933	32	4107.9
							II	4-1944	2-1946	22	2215.7
							III	7-1951	2-1953	19	1911.9
							IV	12-1936	2-1939	26	1842.1
288/528	1920	VII	12-1963	8-1965	20	1605.7	I	3-1944	3-1948	48	3319.6
							II	10-1950	2-1953	28	2905.8
							III	3-1931	11-1933	32	2398.1
							IV	8-1925	10-1927	26	1910.7
							V	5-1948	3-1950	22	1745.1
256/453	1901	VIII	12-1963	7-1965	19	1540.8	I	5-1912	11-1917	66	4729.5
							II	2-1930	11-1933	45	3713.6
							III	11-1950	3-1953	28	2584.4
							IV	7-1948	3-1950	20	2377.9
							V	7-1925	10-1927	27	2192.2
254/589	1931	VIII	1-1964	5-1965	16	1578.5	I	6-1956	12-1958	30	2502.3
							II	5-1941	11-1943	30	2468.6
							III	10-1950	2-1953	28	2217.4
							IV	2-1931	11-1933	33	2038.5
							V	8-1961	11-1962	15	1370.5
320/654	1931	II	1-1964	8-1965	19	2040.8	I	1-1951	11-1953	34	2793.4
							III	12-1931	12-1933	23	2033.3
							IV	2-1944	2-1946	24	1974.7
							V	5-1948	2-1950	21	1858.4
287/441	1884	VII	1-1964	5-1965	16	1849.5	I	11-1913	10-1916	35	3409.0
							II	3-1931	11-1933	32	3246.7
							III	6-1921	1-1923	19	2374.0
							IV	8-1925	10-1927	26	2324.7
							V	4-1951	2-1953	22	2181.3
256/638	1921	VIII	1-1964	7-1965	18	1349.5	I	9-1950	1-1955	51	4201.6
							II	11-1929	11-1933	48	3581.8
							III	5-1948	2-1950	21	1807.4
							IV	8-1925	10-1927	26	1750.6
							V	1-1944	1-1946	24	1611.4

(a) Region S6

Station No.	Start of Record	CURRENT DROUGHT					WORST PREVIOUS DROUGHT				
		Drought Order	Start	End	Duration (months)	Drought Index Y x D	Drought Order	Start	End	Duration (months)	Drought Index Y x D
289/102	1925	V	1-1964	8-1965	19	1807.9	I	11-1929	11-1933	48	3894.6
							II	2-1944	12-1947	46	3162.9
							III	5-1951	2-1953	20	2219.3
							IV	5-1948	12-1949	19	2607.7
253/174	1917	VI	1-1964	7-1965	18	1350.4	I	5-1931	11-1933	30	3290.0
							II	7-1921	3-1925	44	2955.1
							III	8-1925	10-1927	26	2151.8
							IV	3-1944	4-1946	25	1978.1
							V	12-1950	10-1953	34	1572.4
255/202	1901	II	5-1964	5-1965	12	2936.8	I	2-1959	11-1963	57	5090.4
							III	10-1950	2-1953	28	2464.1
							IV	8-1925	10-1927	26	2163.3
							V	6-1907	2-1909	20	1793.4

N.B. The records of some rainfall stations are known to be less reliable than others, which will account for some of the apparent anomalies in drought duration and intensity within the various regions.

AGRO-ECONOMIC REGIONS
AND
RAINFALL STATIONS



DROUGHT CONDITIONS IN
THE NORTHERN REGIONS OF
SOUTH AFRICA DURING 1964-5.

