

Appendix K

Example of Application of the WSE Regulation Schedule

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On 11/30/1999:

- I. Stage values taken from the SYSTEM STORAGE REPORT 11/30/1999, published by the SFWMD.

Lake Okeechobee Stage: 16.85 ft. (Estimated)

Lake Okeechobee Stage is in Zone D of the WSE Regulation Schedule.

II. Part 1: Discharge to the Water Conservation Areas (WCAs)

Need to look at Tributary Hydrologic Conditions: DRY (Falls in the Dry condition) (See Part 2 below).

Therefore, no releases would be made to the WCAs under these conditions.

CONCLUSION: No Flows to the WCAs.

III. Part 2: Discharge to Tidewater

Tributary Hydrologic Conditions: -1.20 inches of net rainfall through 11/26/1999.

According to the classification in Table 7-4 of the Water Control Plan, the condition is DRY. The graph depicting the tributary conditions for this specific case is given in Figure K-1. The tributary conditions are posted weekly by the SFWMD at the following URL address:

http://www.sfwmd.gov/org/pld/hsm/reg_app/opln/TRIBUTARY

CONCLUSION: No Discharge to Tidewater

Upper and Lower Kissimmee Tributary Basin Conditions
 End of Week Values for 30-day running Average of Net Rainfall through 11-26-99

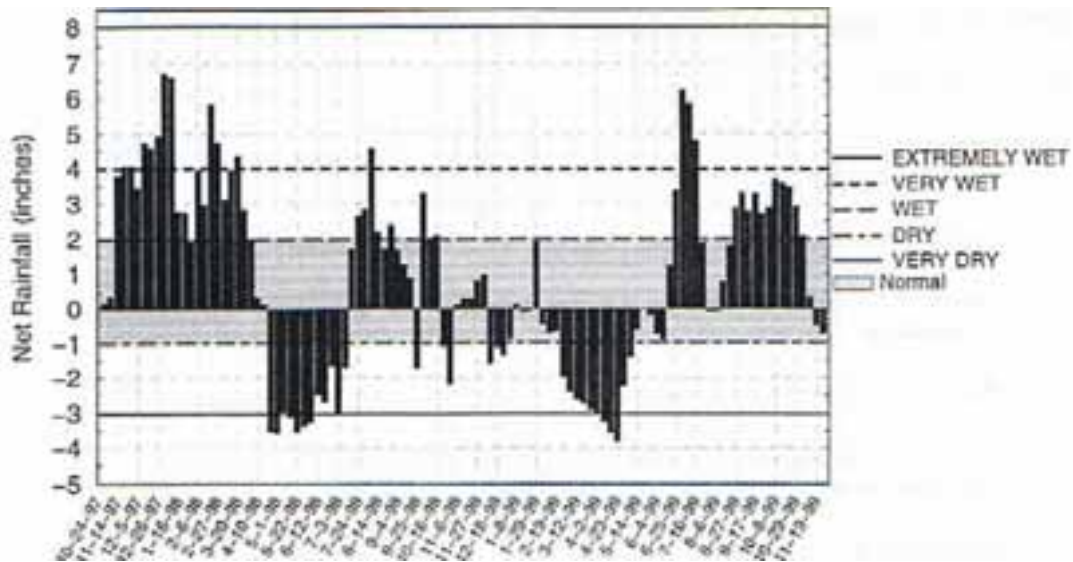


Figure K-1. Lake Okeechobee Tributary Basin Conditions by the end of November 1999

Lake Okeechobee Outlooks

Even though this analysis is not required at this time for the application of WSE, Table K-1 provides a summary of the Lake Okeechobee Net Inflow Seasonal and Multi-seasonal Outlooks using Croley's method, the SFWMD empirical method and sub-sampling from La Nina Years. Values are expressed in feet of equivalent depth for the Lake. These results are based on the CPC climate outlook released November 18, 1999, for the period starting December 1999.

Table K-1. Lake Okeechobee Net Inflow seasonal and multi-seasonal outlooks for the period starting December 1999 (Equivalent Lake Okeechobee depth in feet)

Season	Croley's Method		SFWMD Empirical		Sub Sampling from La Nina	
	Value	Condition	Value	Condition	Value	Condition
Current (Dec-May)	0.02	Dry	-0.07	Dry	-1.00	Dry
Multi-season (Dec-Oct)	2.55	Normal	1.91	Normal	1.45	Normal

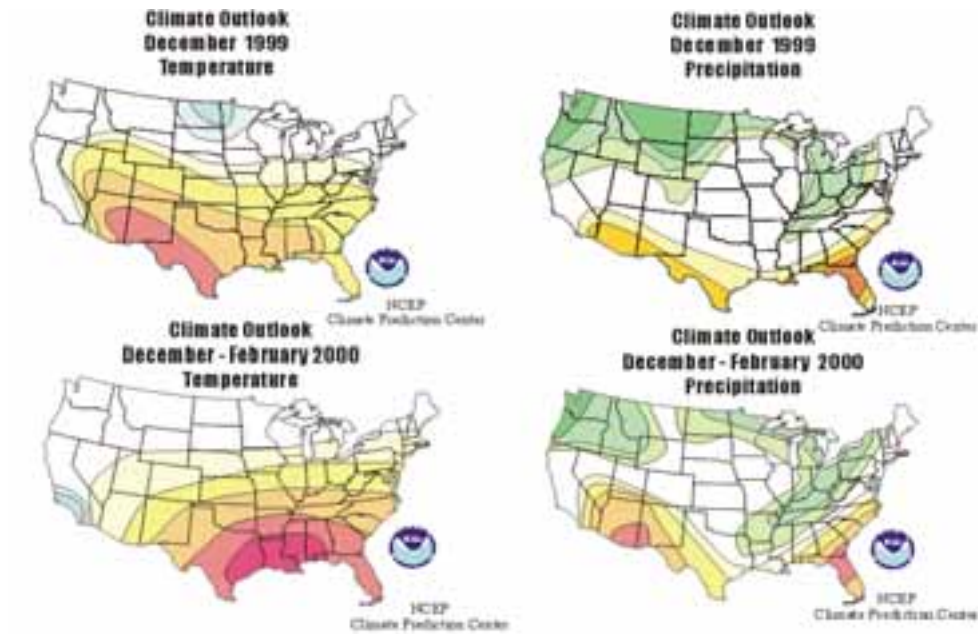
Note that for this particular application the three methods yield the same outlook for the Lake Okeechobee Net Inflows.

Table K-2 provides the numerical values of the CPC probabilities, obtained from the maps produced by the CPC and posted on November 18, 1999.

Table K-2. Climate Prediction Center Rainfall Outlook Probabilities for the Lake Okeechobee tributary basins, for the period starting December 1999

Window	Duration (months)	CPC Rainfall Outlook Probabilities		
		Below	Normal	Above
Dec	1	0.459	0.333	0.208
Dec-Feb	3	0.534	0.333	0.133
Jan-Mar	3	0.584	0.333	0.083
Feb-Apr	3	0.484	0.333	0.183
Mar-May	3	0.409	0.333	0.258
Apr-Jun	3	0.333	0.334	0.333
May-Jul	3	0.333	0.334	0.333
Jun-Aug	3	0.333	0.334	0.333
Jul-Sep	3	0.333	0.334	0.333
Aug-Oct	3	0.333	0.334	0.333
Sep-Nov	3	0.333	0.334	0.333
Oct-Dec	3	0.333	0.334	0.333
Nov-Jan	3	0.333	0.334	0.333

The Climate Outlook maps are given in Figures K-2 and K-3.



Release Date: November 18, 1999

Precip	Temp	Probability anomaly as shown on map	Probability of occurrence for each class			Most likely category
			A	N	B	
		40%-50%	73.3%-83.3%	23.3%-13.3%	3.3%	"Above"
		30%-40%	63.3%-73.3%	33.3-23.3%	3.3%	"Above"
		20%-30%	53.3-63.3%	33.3%	13.3%-3.3%	"Above"
		10%-20%	43.3-53.3%	33.3%	18.3%-28.3%	"Above"
		5%-10%	38.3-43.3%	33.3%	28.3%-23.3%	"Above"
		0%-5%	30.8%-33.3%	33.3%	30.8%-33.3%	"Near Normal"
		5%-10%	28.3%-30.8%	33.3%	28.3-30.8%	"Near Normal"
		0%-5%	28.3%-33.3%	33.3%	33.3%-38.3%	"Below"
		5%-10%	23.3%-28.3%	33.3%	38.3%-43.3%	"Below"
		10%-20%	28.3%-18.3%	33.3%	43.3%-53.3%	"Below"
		20%-30%	13.3%-3.3%	33.3%	53.3-63.3%	"Below"
		30%-40%	3.3%	33.3%-23.3%	63.3%-73.3%	"Below"
		40%-50%	3.3%	23.3%-13.3%	73.3%-83.3%	"Below"
		0%	33.3%	33.3%	33.3%	"Climatology"

Figure K-2. CPC December and December-February Temperature and Precipitation Outlooks

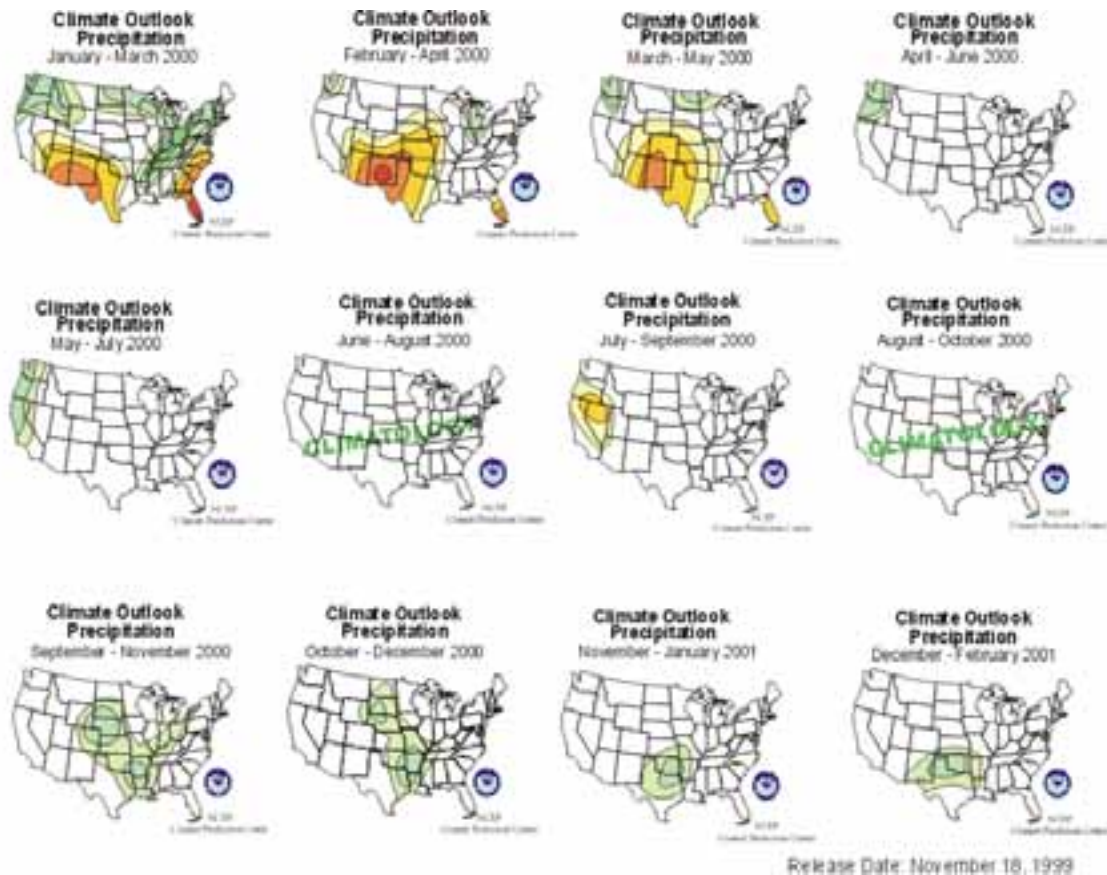


Figure K-3. CPC 3-month windows precipitation outlooks for the period January 2000 to February 2001

The CPC outlook maps can be found at the following URL address:

http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/seasonal_forecast.html

The weights computed using Croley's method are presented in Table K-3. Unit values for the weights imply that a normal forecast is used for that particular month, in that particular year. Basically, one set of 84 weights was derived for the dry conditions defined in Table K-2 and depicted in the maps. The weights are then applied to the Lake Okeechobee historical data (Table 7-8, Water Control Plan) to produce the monthly Lake Okeechobee net inflow outlook value, as in equation (2) of Appendix I. Equations (3) and (12), also in Appendix I, are used to produce the seasonal and multi-seasonal outlook for the Lake.

Table K-3. Weights derived for Lake Okeechobee, according to the precipitation outlook for December 1999

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1914	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1915	1.3011	1.3011	1.3011	1.3011	1	1	1	1	1	1	1	1.3011
1916	1.7433	1.7433	1.7433	1.7433	1	1	1	1	1	1	1	1.7433
1917	1.1838	1.1838	1.1838	1.1838	1	1	1	1	1	1	1	1.1838
1918	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1919	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1920	0.3002	0.3002	0.3002	0.3002	1	1	1	1	1	1	1	0.3002
1921	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1922	1.5501	1.5501	1.5501	1.5501	1	1	1	1	1	1	1	1.5501
1923	0.8086	0.8086	0.8086	0.8086	1	1	1	1	1	1	1	0.8086
1924	0.8819	0.8819	0.8819	0.8819	1	1	1	1	1	1	1	0.8819
1925	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1926	1.6603	1.6603	1.6603	1.6603	1	1	1	1	1	1	1	1.6603
1927	1.6813	1.6813	1.6813	1.6813	1	1	1	1	1	1	1	1.6813
1928	1.1838	1.1838	1.1838	1.1838	1	1	1	1	1	1	1	1.1838
1929	1.3036	1.3036	1.3036	1.3036	1	1	1	1	1	1	1	1.3036
1930	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1931	0.3002	0.3002	0.3002	0.3002	1	1	1	1	1	1	1	0.3002
1932	2.0846	2.0846	2.0846	2.0846	1	1	1	1	1	1	1	2.0846
1933	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1934	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1935	0.1146	0.1146	0.1146	0.1146	1	1	1	1	1	1	1	0.1146
1936	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1937	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1938	1.4882	1.4882	1.4882	1.4882	1	1	1	1	1	1	1	1.4882
1939	1.076	1.076	1.076	1.076	1	1	1	1	1	1	1	1.076
1940	0.0167	0.0167	0.0167	0.0167	1	1	1	1	1	1	1	0.0167
1941	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1942	0.5277	0.5277	0.5277	0.5277	1	1	1	1	1	1	1	0.5277
1943	2.0476	2.0476	2.0476	2.0476	1	1	1	1	1	1	1	2.0476
1944	2.0476	2.0476	2.0476	2.0476	1	1	1	1	1	1	1	2.0476
1945	1.4882	1.4882	1.4882	1.4882	1	1	1	1	1	1	1	1.4882
1946	2.1584	2.1584	2.1584	2.1584	1	1	1	1	1	1	1	2.1584
1947	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1948	1.7433	1.7433	1.7433	1.7433	1	1	1	1	1	1	1	1.7433
1949	2.0964	2.0964	2.0964	2.0964	1	1	1	1	1	1	1	2.0964
1950	1.4882	1.4882	1.4882	1.4882	1	1	1	1	1	1	1	1.4882
1951	2.0621	2.0621	2.0621	2.0621	1	1	1	1	1	1	1	2.0621
1952	1.0796	1.0796	1.0796	1.0796	1	1	1	1	1	1	1	1.0796
1953	0.2013	0.2013	0.2013	0.2013	1	1	1	1	1	1	1	0.2013
1954	0.3002	0.3002	0.3002	0.3002	1	1	1	1	1	1	1	0.3002

Table K3 (Continued)

1955	1.7157	1.7157	1.7157	1.7157	1	1	1	1	1	1	1	1.7157
1956	1.5116	1.5116	1.5116	1.5116	1	1	1	1	1	1	1	1.5116
1957	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1958	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1959	0.3002	0.3002	0.3002	0.3002	1	1	1	1	1	1	1	0.3002
1960	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1961	1.7222	1.7222	1.7222	1.7222	1	1	1	1	1	1	1	1.7222
1962	2.041	2.041	2.041	2.041	1	1	1	1	1	1	1	2.041
1963	0.9162	0.9162	0.9162	0.9162	1	1	1	1	1	1	1	0.9162
1964	1.5286	1.5286	1.5286	1.5286	1	1	1	1	1	1	1	1.5286
1965	0.8819	0.8819	0.8819	0.8819	1	1	1	1	1	1	1	0.8819
1966	1.7986	1.7986	1.7986	1.7986	1	1	1	1	1	1	1	1.7986
1967	1.5435	1.5435	1.5435	1.5435	1	1	1	1	1	1	1	1.5435
1968	2.0846	2.0846	2.0846	2.0846	1	1	1	1	1	1	1	2.0846
1969	0	0	0	0	1	1	1	1	1	1	1	0
1970	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1971	1.8689	1.8689	1.8689	1.8689	1	1	1	1	1	1	1	1.8689
1972	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1973	1.0859	1.0859	1.0859	1.0859	1	1	1	1	1	1	1	1.0859
1974	1.4882	1.4882	1.4882	1.4882	1	1	1	1	1	1	1	1.4882
1975	2.0476	2.0476	2.0476	2.0476	1	1	1	1	1	1	1	2.0476
1976	1.891	1.891	1.891	1.891	1	1	1	1	1	1	1	1.891
1977	1.2416	1.2416	1.2416	1.2416	1	1	1	1	1	1	1	1.2416
1978	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536
1979	0.7108	0.7108	0.7108	0.7108	1	1	1	1	1	1	1	0.7108
1980	0.3002	0.3002	0.3002	0.3002	1	1	1	1	1	1	1	0.3002
1981	1.9857	1.9857	1.9857	1.9857	1	1	1	1	1	1	1	1.9857
1982	0	0	0	0	1	1	1	1	1	1	1	0
1983	0.0167	0.0167	0.0167	0.0167	1	1	1	1	1	1	1	0.0167
1984	0.7977	0.7977	0.7977	0.7977	1	1	1	1	1	1	1	0.7977
1985	1.854	1.854	1.854	1.854	1	1	1	1	1	1	1	1.854
1986	0.0167	0.0167	0.0167	0.0167	1	1	1	1	1	1	1	0.0167
1987	0.644	0.644	0.644	0.644	1	1	1	1	1	1	1	0.644
1988	1.3559	1.3559	1.3559	1.3559	1	1	1	1	1	1	1	1.3559
1989	1.2458	1.2458	1.2458	1.2458	1	1	1	1	1	1	1	1.2458
1990	0.7717	0.7717	0.7717	0.7717	1	1	1	1	1	1	1	0.7717
1991	0.6809	0.6809	0.6809	0.6809	1	1	1	1	1	1	1	0.6809
1992	0.2247	0.2247	0.2247	0.2247	1	1	1	1	1	1	1	0.2247
1993	0.2867	0.2867	0.2867	0.2867	1	1	1	1	1	1	1	0.2867
1994	0.0167	0.0167	0.0167	0.0167	1	1	1	1	1	1	1	0.0167
1995	0.9204	0.9204	0.9204	0.9204	1	1	1	1	1	1	1	0.9204
1996	1.3381	1.3381	1.3381	1.3381	1	1	1	1	1	1	1	1.3381
1997	0.0536	0.0536	0.0536	0.0536	1	1	1	1	1	1	1	0.0536