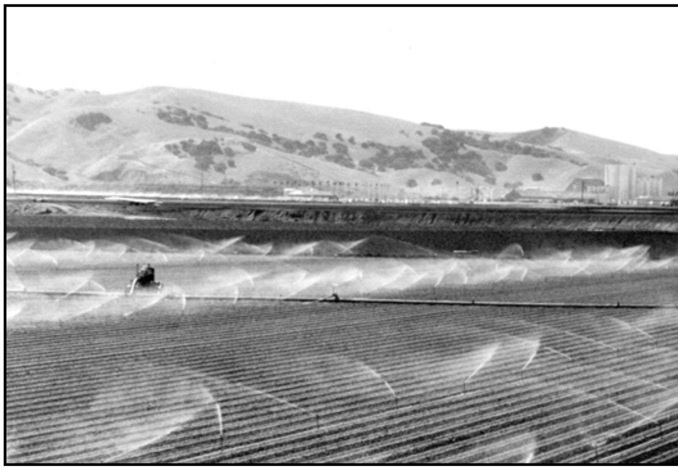

1998 Ground Water Extraction Summary Report

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Overview of the Extraction Reporting Program

History of the Extraction Reporting Program
In February 1993, the Monterey County Board of Supervisors adopted Ordinance No. 3663, which required water suppliers within Zones 2, 2A and 2B to report water-use information for ground water extraction facilities and service connections. Ordinance No. 3717, which replaced Ordinance No. 3663, was adopted in October 1993; it modified certain other requirements in the old ordinance but kept the ground water extraction reporting requirements in place for wells with a discharge pipe having an inside diameter of at least 3 inches.

Monterey County Water Resources Agency (Agency) has collected ground water extraction data from well operators for water reporting years beginning November 1 and ending October 31, starting with the 1992-1993 water reporting year. The information received from the over 400 well operators in the above-referenced zones of the Salinas Valley is compiled by the Groundwater Extraction Management System (GEMS) portion of the Water Resources Agency Information Management System (WRAIMS), a relational database maintained by the Agency. The intent of the ground water extraction reporting program is to measure and document the amount of ground water extracted from Zones 2, 2A, and 2B of the Salinas Valley Ground Water Basin each year.

Since 1991, the Agency has required the annual submittal of Agricultural Water Conservation Plans, which outline the best management practices that are adopted each year by growers in the Salinas Valley. In 1996, an ordinance was passed that requires the filing of Urban Water Conservation Plans. Developed as the urban counterpart of the agricultural water conservation plans, this program provides an overview of per capita water use and the best management practices being implemented by urban water users as conservation measures.

1998 Ground Water Extraction Summary Report
The purpose of this report is to summarize the data collected in February 1999 from these annual reporting programs: Ground Water Extraction Reporting, Agricultural and Urban Water Conservation Plans, and Water and Land Use Information. The *agricultural* data from the ground water extraction reporting program covers the water reporting year of **November 1, 1997, through October 31, 1998**; the *urban* data covers **calendar year 1998**. The agricultural and urban water conservation plans adopted for 1999 are also summarized, as are temperature, precipitation, and reference evapotranspiration data from the California Irrigation Management Information System (CIMIS) and local weather stations. With this information, this report is intended to present a snapshot of current water pumping within the Salinas Valley, including agricultural and urban water conservation improvements that are being implemented to reduce total water pumping. It is not the purpose of this report to thoroughly analyze the factors that contribute to increases or decreases in pumping.

Explanation of Reporting Methods
The ground water extraction reporting program allows water users to report water well extractions by one of three different measuring methods, using calculations based on water flowmeter, electrical meter, or hour meter (timer) data. The Agency requires regular pump efficiency testing to ensure the accuracy of the data reported. The summary of ground water extractions presented in this report is compiled from data generated from all three reporting methods.

Disclaimer Regarding Quality of Data
While the Agency has made every effort to ensure the accuracy of the data presented in this report, it should be noted that the data is submitted by the individual reporting parties and is not verified by Agency staff. In addition, since so many factors affect the calculations, it is understood that no reporting method is 100 percent accurate.

The Agency did not receive ground water extraction reports from approximately seven percent (7%) of the wells in the Salinas Valley for the 1997-1998 (1998) water reporting year. Agricultural and Urban Water Conservation Plan submittals for 1999 were short by thirteen percent (13%) and fourteen percent (14%), respectively.

Notes Regarding Data Reporting Format
Ground water extraction data is presented in this report by measurement in acre-feet. One acre-foot is equal to 325,851 gallons.

Ground Water Extraction Data Summary

The Agency has designated subareas of the Salinas Valley Ground Water Basin whose boundaries are drawn where discernible changes occur in the hydrogeologic conditions. These boundaries are shown in Figure 1.

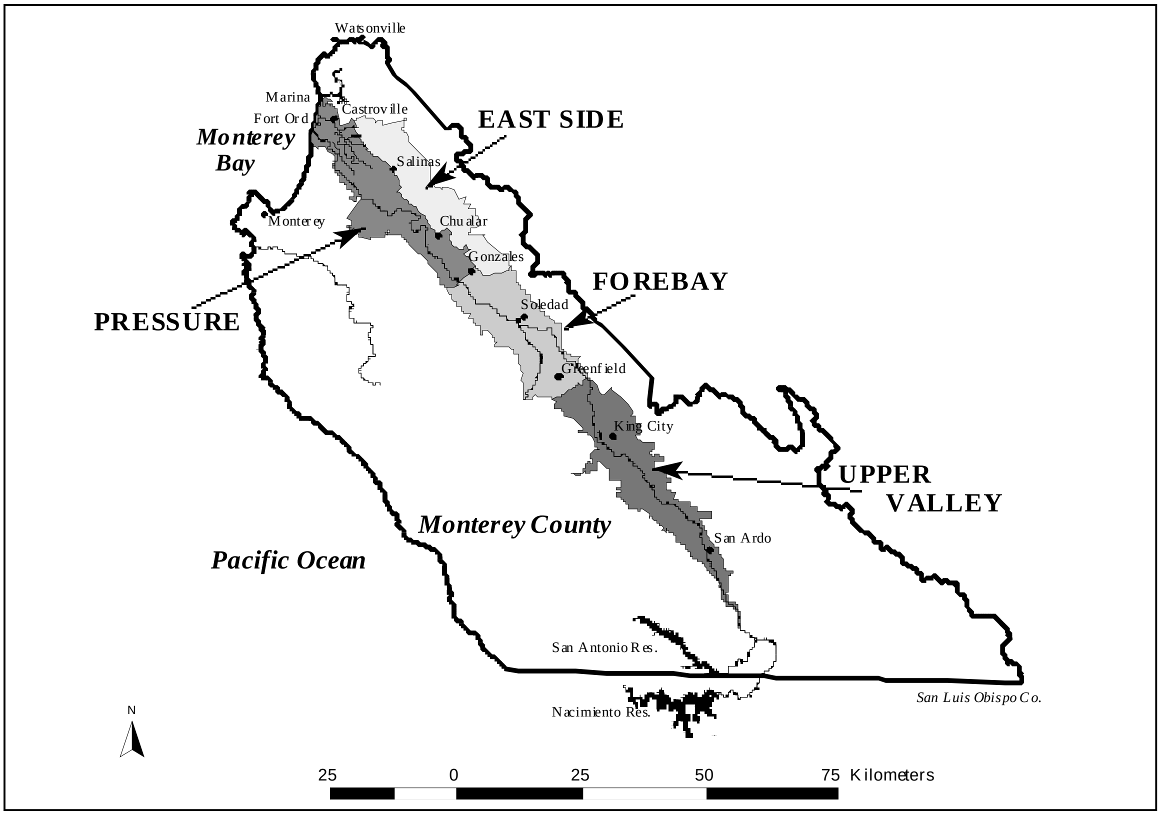


Figure 1: Salinas Valley subareas

Summary of Methods Used for Extraction Reporting
The distribution of methods used for extraction reporting for the 1997-1998 water reporting year is shown in Table 1; a percentage distribution by volume is shown in Figure 2.

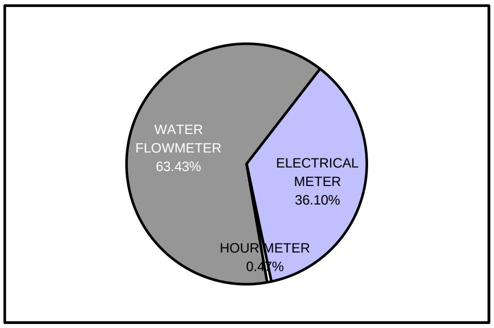


Figure 2: Percentage by volume of methods used for extraction reporting

Table 1. Total extraction data by reporting method

Reporting Method	*Acre-Feet per Reporting Method*	*Wells per Reporting Method*
Water Flowmeter	279,761	1,215
Electrical Meter	159,215	498
Hour Meter	2,072	7
Total	**441,048**	**1,720**
Average ('95-'98)	**526,784**	**1,778**

Ground Water Extraction Data Summary

Total Extraction Data by Subarea and Type of Use
The total ground water extractions from Zones 2, 2A and 2B for the 1997-1998 (1998) water reporting year are summarized by hydrologic subarea and (1) type of use (agricultural and urban) in Table 2 and (2) percentage in Figure 3.

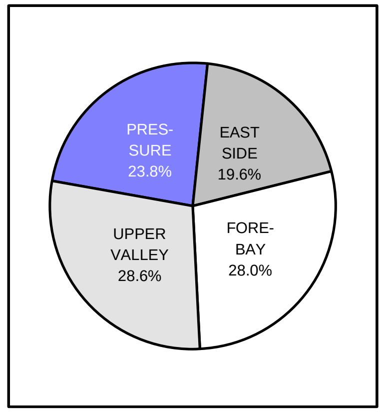


Figure 3: Percentage of total extractions by subarea

Table 2. Total extraction data by subarea and type of use

Subarea	Agricultural Pumping (acre-feet)	Urban Pumping (acre-feet)	Total Pumping (acre-feet)
Pressure	85,184	19,732	104,916
East Side	74,148	12,213	86,361
Forebay	117,812	5,855	123,667
Upper Valley	122,377	3,727	126,104
Total	**399,521**	**41,527**	**441,048**

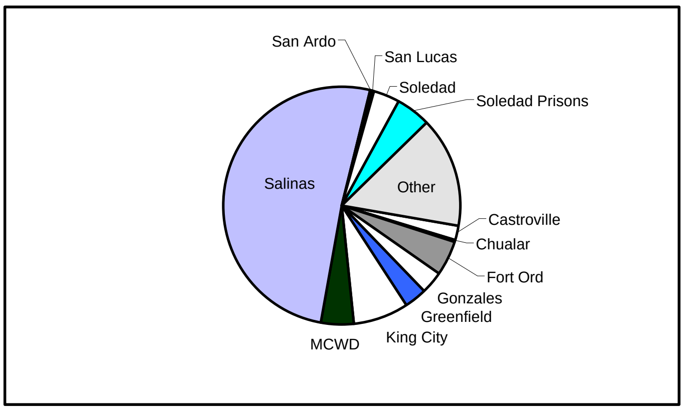


Figure 4: Percentage representation of urban extraction by city or area

Urban Extraction Data by City or Area
The total ground water extractions attributed to urban (residential, commercial/institutional, industrial, and governmental) pumping for the 1998 water reporting year are summarized by city or area in Table 3. Figure 4 is a graphic representation of each city or area's percentage of the total urban pumping for 1998.

Table 3. Urban extraction data by city or area

City or Area	Urban Pumping (acre-feet)	Percentage of Total
Castroville	813	2.0%
Chualar	74	0.2%
Fort Ord	2,086	5.0%
Gonzales	1,183	2.8%
Greenfield	1,306	3.1%
King City	3,191	7.7%
Marina Coast Water District	1,860	4.5%
Salinas	21,499	51.8%
San Ardo	118	0.3%
San Lucas	57	0.1%
Soledad	1,506	3.6%
Soledad Prisons	1,981	4.8%
Other Unincorporated Areas	5,853	14.1%
Total	**41,527**	**100%**

Agricultural Water Conservation Plans

The Agricultural Water Conservation Plans include irrigated acreage, irrigation method, and crop category. This information reflects the changing trends toward more efficient irrigation methods in the Salinas Valley. Tables 4, 5, 6, and 7 show the distribution of irrigation methods by crop type for 1993, 1997, 1998, and 1999 respectively.

Table 4. 1993 distribution of irrigation methods by crop type

1993	*Furrow (acres)*	*Sprinkler & Furrow (acres)*	*Hand Move Sprinklers (acres)*	*Solid Set Sprinklers (acres)*	*Linear Move (acres)*	*Drip (acres)*	*Other[1] (acres)*	*Total (acres)*
Vegetables	2,349	84,060	30,764	6,607	3,827	3,682	0	131,289
Field Crops	575	2,173	2,236	90	50	48	0	5,172
Berries	1	0	0	0	0	4,158	0	4,159
Grapes	261	0	0	13,347	0	15,976	0	29,584
Tree Crops	0	0	122	251	0	1,216	10	1,599
Forage	41	202	1,327	0	48	0	189	1,807
Total	**3,227**	**86,435**	**34,449**	**20,295**	**3,925**	**25,080**	**199**	**173,610**

Table 5. 1997 distribution of irrigation methods by crop type

1997	*Furrow (acres)*	*Sprinkler & Furrow (acres)*	*Hand Move Sprinklers (acres)*	*Solid Set Sprinklers (acres)*	*Linear Move (acres)*	*Drip (acres)*	*Other[2] (acres)*	*Total (acres)*
Vegetables	3,264	82,114	21,085	5,620	3,278	12,061	0	127,422
Field Crops	267	1,598	1,245	241	39	72	0	3,462
Berries	0	0	0	0	0	3,977	0	3,977
Grapes	12	550	0	6,245	0	27,734	0	34,541
Tree Crops	0	0	10	433	0	1,679	0	2,122
Forage	121	46	171	179	0	48	298	863
Total	**3,664**	**84,308**	**22,511**	**12,718**	**3,317**	**45,571**	**298**	**172,387**

Table 6. 1998 distribution of irrigation methods by crop type

1998	*Furrow (acres)*	*Sprinkler & Furrow (acres)*	*Hand Move Sprinklers (acres)*	*Solid Set Sprinklers (acres)*	*Linear Move (acres)*	*Drip (acres)*	*Other[3] (acres)*	*Total (acres)*
Vegetables	1,739	73.876	28,581	4,795	2,748	11,589	228	123,556
Field Crops	304	630	618	262	39	4	0	1,857
Berries	0	0	0	0	0	3,237	0	3,237
Grapes	10	2,174	0	4,528	0	26,879	0	33,591
Tree Crops	0	0	65	209	0	1,710	0	1,984
Forage	18	5	439	172	0	102	225	961
Total	**2,071**	**76,685**	**29,703**	**9,966**	**2,787**	**43,521**	**453**	**165,186**

Table 7. 1999 distribution of irrigation methods by crop type

1999	*Furrow (acres)*	*Sprinkler & Furrow (acres)*	*Hand Move Sprinklers (acres)*	*Solid Set Sprinklers (acres)*	*Linear Move (acres)*	*Drip (acres)*	*Other[4] (acres)*	*Total (acres)*
Vegetables	1,595	73,848	20,017	5,301	2,836	13,640	1,167	118,404
Field Crops	346	968	694	455	36	0	95	2,594
Berries	0	0	250	0	0	2,592	0	2,842
Grapes	12	0	0	5,631	0	29,488	74	35,205
Tree Crops	0	0	0	482	0	4,444	10	4,936
Forage	37	141	0	215	0	0	699	1,092
Total	**1,990**	**74,957**	**20,961**	**12,084**	**2,872**	**50,164**	**2,045**	**165,073**

[1, 2, 3, & 4] "Other" may include different combinations of irrigation systems or areas that were not irrigated.

Agricultural Water Conservation Plans

For the past nine years, Salinas Valley growers have submitted Agricultural Water Conservation Plans to the Agency. Table 8 shows the number of acres, by year, on which selected "Best Management Practices," or water conservation measures, have been implemented.

Table 8. Agricultural "Best Management Practices" implemented from 1991 through 1999

Best Management Practices	1991 Acres	1992 Acres	1993 Acres	1994 Acres	1995 Acres	1996 Acres	1997 Acres	1998 Acres	1999 Acres
12 Months Set Aside	4,705	4,810	6,586	6,096	5,064	3,123	3,508	2,058	1,332
Summer Fallow/ Other Fallow	1,480	6,546	5,953	4,081	6,486	6,208	2,241	2,277	3,657
Flowmeters	31,702	26,404	39,206	127,971	122,054	126,031	122,475	132,225	124,963
Time Clock/ Pressure Switch	131,237	131,237	142,162	134,985	121,645	137,297	135,954	137,414	130,863
Soil Moisture Sensors	39,549	39,549	51,348	43,883	43,188	51,428	56,936	58,854	62,357
Pre-Irrigation Reduction	92,865	112,290	117,899	108,454	104,937	99,429	104,203	101,649	89,454
Reduced Sprinkler Spacing	64,613	72,226	81,736	74,409	75,451	78,925	78,142	81,856	75,884
Sprinkler Improvements	70,035	97,233	104,160	107,626	102,053	116,809	110,523	108,507	98,409
Off-Wind Irrigation	100,274	109,050	115,984	101,765	94,810	113,381	111,076	102,873	102,433
Leakage Reduction	96,672	109,589	117,455	112,135	110,973	119,727	125,334	120,006	114,882
Micro Irrigation System	18,120	22,952	24,408	25,506	29,307	37,991	42,367	40,893	48,562
Surge Flow Irrigation	9,334	18,230	22,588	37,866	15,202	19,772	20,507	16,192	18,468
Tailwater Return System	20,357	25,034	21,020	20,994	15,101	22,707	21,121	22,803	23,597
Land Leveling/ Grading	55,186	60,563	59,413	58,963	57,749	64,164	65,143	57,625	58,679

Note: Since different practices may be applied to the same acreage, "total acreage" would not be a meaningful figure.

Summary of Reported Unit Agricultural Water Pumped by Subarea

Table 9 presents the average unit agricultural water pumped (acre-feet/acre) by subarea, calculated using the reported acreage and water pumped for the 1997-1998 water reporting year. The data used for Table 9 represent a subset of the totals shown in Table 2; only wells with complete reports of extraction data, acreage, and crop type could be used in the calculation.

In the Upper Valley subset, the ratio of grapes acreage to vegetables was disproportionate based on the Agency's recent land use surveys. The use of this ratio would skew the calculation of acre-feet/acre for the Upper Valley towards the lower usage of grapes. Therefore, the unit use of water by crop type was weighted using the ratio of crop type for each subarea from the Agency's recent land use surveys.

Table 9. Reported unit agricultural water pumped by subarea

Subarea	Pressure	East Side	Forebay	Upper Valley	Overall Average
Unit Water Pumped (acre-feet/acre)	**1.74**	**1.90**	**2.19**	**2.58**	**2.10**

Please note that weather patterns, soil types, and crop types affect the amount of water needed for irrigation. Even during a normal rain year, pumping rates will vary from one area to another.

Nutrient Management Measures

Contact Monterey County Water Resources Agency's Water Quality staff at (831) 755-4860.

Urban Water Conservation Plans

This is the fourth year of data collection for the Urban Water Conservation Plan program. Table 10 shows the implementation of "Best Management Practices" – for 1996, 1997, 1998, and 1999 – as a percentage of total acreage reported. It is important to note that, while all of the listed practices apply to the "large" water systems (over 200 customer connections), not all apply to the "small" water systems (between 2 and 200 customer connections). The practices that apply *only* to the large systems are printed in **bold** below.

Table 10. Urban "Best Management Practices" implemented in 1996 through 1999

Best Management Practices	*1996*	*1997*	*1998*	*1999*
Provide speakers to community groups and media	21%	52%	56%	63%
Use paid and public service advertising	42%	51%	55%	63%
Provide conservation information in bill inserts	56%	90%	66%	58%
Provide individual historical water use information on water bills	82%	85%	62%	54%
Coordinate with other entities in regional efforts to promote water conservation practices	30%	82%	64%	88%
Work with school districts to provide educational materials and instructional assistance	51%	52%	44%	26%
Implement requirements that all new connections be metered and billed by volume of use	66%	91%	92%	89%
Establish a program to retrofit any existing unmetered connections and bill by volume of use	38%	62%	80%	59%
Offer free interior and exterior water audits to identify water conservation opportunities	35%	35%	40%	18%
Provide incentives to achieve water conservation by way of free conservation fixtures (showerheads, hose end timers) and/or conservation "adjustments" to water bills	50%	50%	51%	34%
Enforcement and support of water conserving plumbing fixture standards, including requirement for ultra low flush toilets in all new construction	35%	35%	38%	43%
Support of State/Federal legislation prohibiting sale of toilets using more than 1.6 gallons per flush	74%	76%	72%	61%
Program to retrofit existing toilets to reduce flush volume (with displacement devices)	52%	82%	91%	50%
Program to encourage replacement of existing toilets with ultra low flush (through rebates, incentives, etc.)	20%	20%	46%	48%
Provide guidelines, information, and/or incentives for installation of more efficient landscapes and water-saving practices	86%	94%	94%	81%
Encourage local nurseries to promote use of low water use plants	52%	56%	64%	50%
Develop and implement landscape water conservation ordinances pursuant to the "Water Conservation in Landscaping Act"	3%	3%	21%	49%
Identify and contact top industrial, commercial, and/or institutional customers directly; offer and encourage water audits to identify conservation opportunities	3%	3%	3%	3%
Review proposed water uses for new commercial and industrial water service, and make recommendations for improving efficiency before completion of building permit process	4%	27%	47%	26%
Complete an audit of water distribution system at least every three years as prescribed by AWWA	22%	55%	76%	60%
Perform distribution system leak detection and repair whenever the audit reveals that it would be cost effective	66%	93%	93%	89%
Advise customers when it appears possible that leaks exist on customer's side of water meter	68%	68%	93%	90%
Identify irrigators of large landscapes (3 acres or more) and offer landscape audits to determine conservation opportunities	11%	33%	36%	16%
Provide conservation training, information, and incentives necessary to encourage use of conservation practices	51%	51%	36%	16%
Encourage and promote the elimination of non-conserving pricing and adoption of conservation pricing policies	24%	24%	52%	56%
Implementation of conservation pricing policies	24%	25%	52%	54%
Enact and enforce measures prohibiting water waste as specified in Agency Ordinance No. 3932 or as subsequently amended, and encourage the efficient use of water	53%	78%	91%	82%
Implement and/or support programs for the treatment and reuse of industrial waste water / storm water / waste water	48%	48%	44%	56%

Reference Evapotranspiration (ET_o)

Changes in agricultural water use from year to year are influenced by many factors, with changes in weather, irrigation practices, and cropping patterns being the most significant. The effects of weather changes on crop water needs can be seen in the rate of *evapotranspiration*.

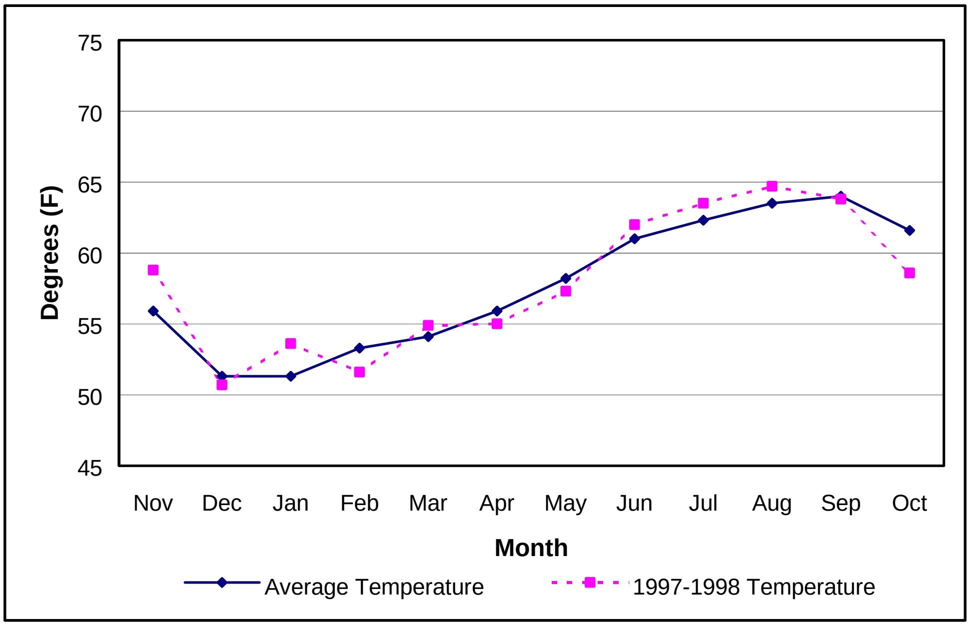


Figure 5: Salinas 1997-1998 monthly temperature compared to average

Evaporation is the physical change of water from liquid to vapor. This process requires energy in the form of heat, received in this case from the sun. Evaporation rates are also significantly affected by relative humidity and wind speed; evaporation rates are increased when the relative humidity is low and the air is warm.

Transpiration is the venting of water vapor through the leaf pores of a living plant. The rate of transpiration depends on the differences between the amount of moisture inside the leaf and the amount of moisture outside the leaf (in the air); the rate is proportional to the relative water vapor saturation of the air (i.e. the higher the humidity, the lower the transpiration rate, and vice-versa). Soil moisture evaporation (E) combined with plant transpiration (T) produces *evapotranspiration* (ET).

Reference evapotranspiration (ET_o) is calculated using temperature, humidity, wind speed, and radiation in an energy balance-aerodynamics equation. The result approximates the water required to grow healthy, non-stressed four- to seven-inch tall Fescue grass. ET_o is normally presented in inches per day and is considered constant over a specific area.

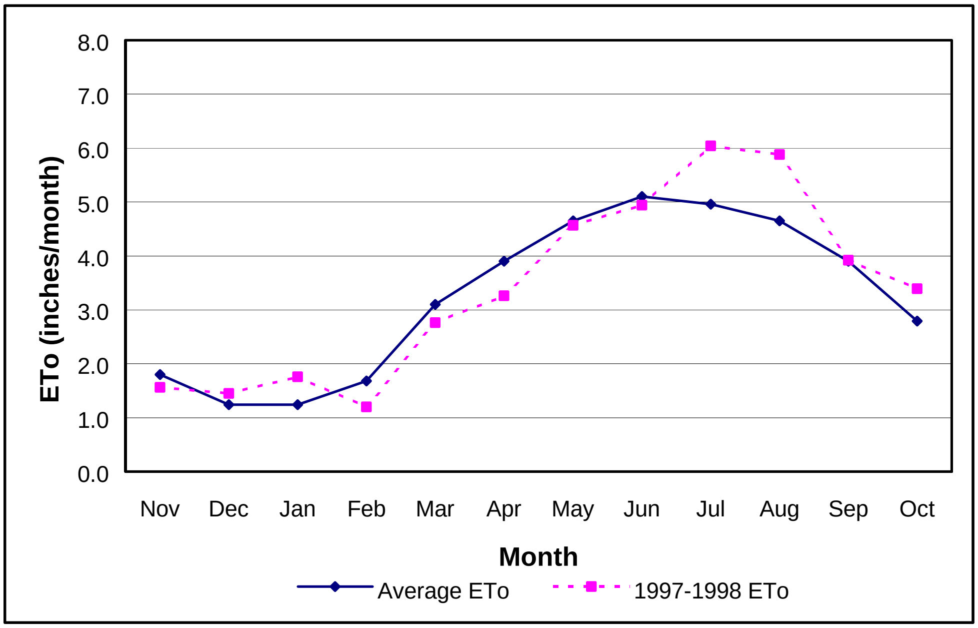


Figure 6: Salinas 1997-1998 monthly ET_o compared to average

Climatic Data Summary

The CIMIS Network

The California Irrigation Management Information System (CIMIS) is a network of automated weather stations located throughout the state. The CIMIS program is sponsored and managed by the California Department of Water Resources (DWR) in cooperation with local governments. In Monterey County, six CIMIS stations are in operation; two are owned by DWR and four belong to the Agency.

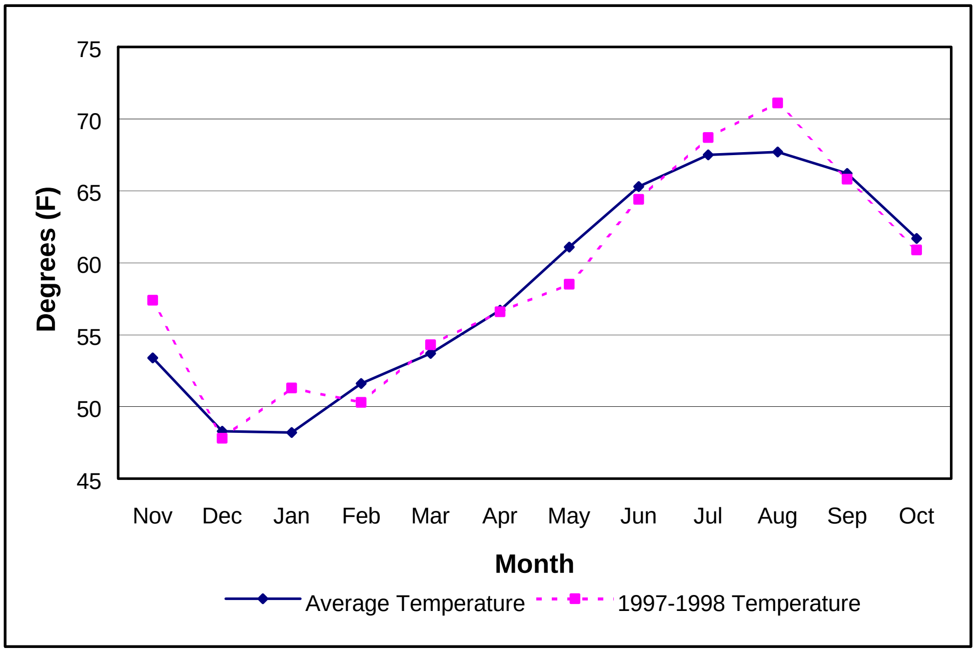


Figure 7: King City 1997-1998 monthly temperature compared to average

CIMIS calculates ET_o based on the real-time data derived from the CIMIS station, including temperature, humidity, solar radiation, soil temperature, rainfall, and wind speed and direction. The data are accessed via phone line by the DWR computer in Sacramento and, after processing, are then available to the user via the Internet or computer modem. The data are available in two formats; one presents average data for the last seven days, and the other presents average monthly data for the last year. The data are available for all the sites within a regional system.

ET_o data can provide insight into relative water demands. The data can be used in calculating irrigation duration and frequency by observing recent past ET_o values to determine a trend. Then, the accepted approach is to expect a persistence of the trend and apply yesterday's ET_o values to today's irrigation using a factor for the direction of the trend. A "crop coefficient" for the specific crop to be irrigated is also included in the calculations.

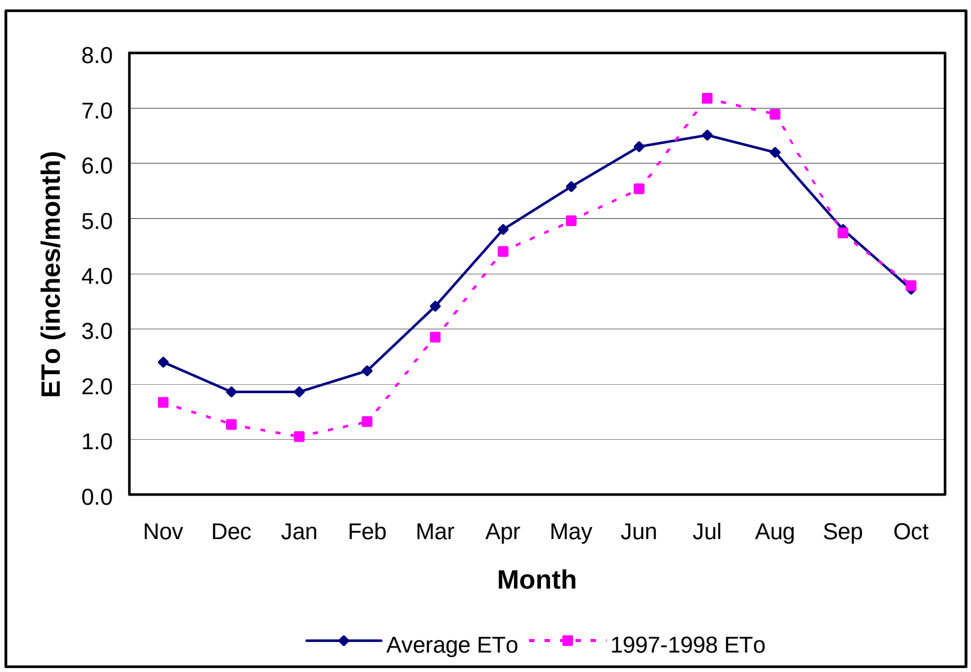


Figure 8: King City 1997-1998 monthly ET_o compared to average

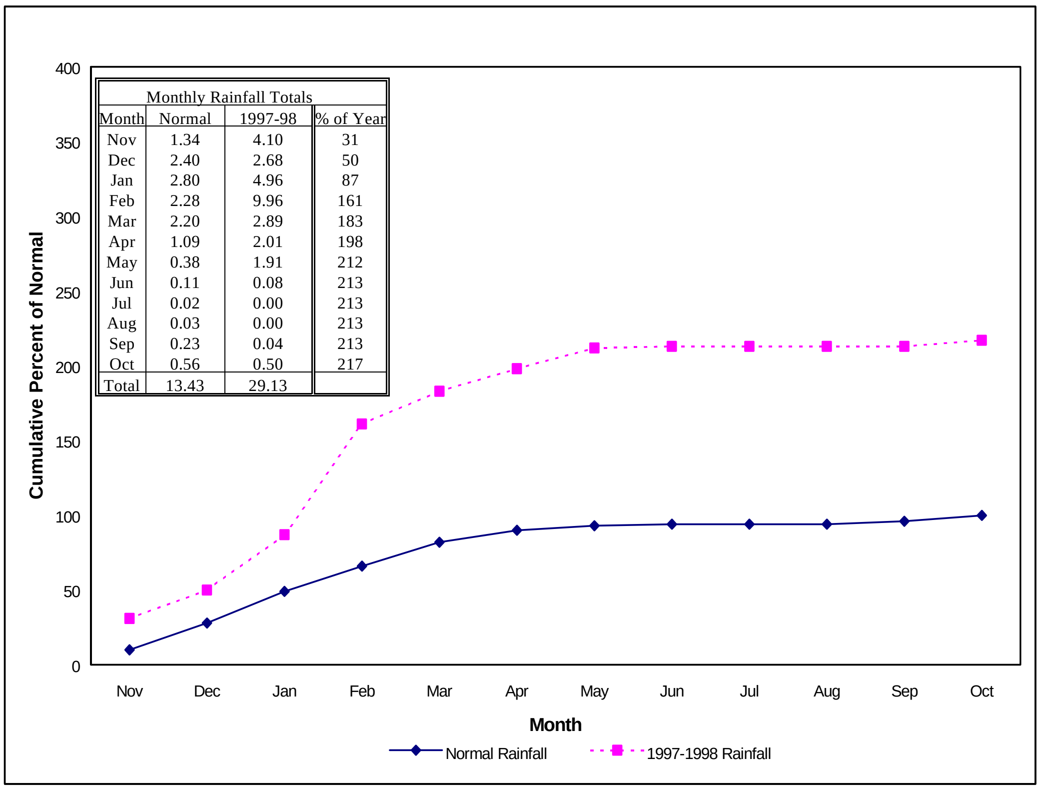
Climatic Data Summary

Minor changes in daily evapotranspiration rates in the Salinas Valley are common and are related to local day-to-day meteorological variations. Long-term or seasonal variations, however, are associated with large-scale anomalies of Pacific sea surface temperatures (SSTs).

1997-1998 Weather Patterns and Related Temperature

During late 1997, SSTs along the West Coast were gradually increasing as a precursor to the El Niño phenomenon that became fully developed from November 1997 through late May 1998. Positive SST anomalies reached a maximum during the winter months and gradually decreased during the spring of 1998. During the following summer and early fall, positive SST anomalies gradually neutralized and then became negative by late fall in response to the developing La Niña phenomenon. Figure 5 shows 1997-1998 temperatures compared to long-term Salinas averages. During early winter of 1997, it would seem logical that day-to-day air temperatures would be warmed by El Niño related warmer sea temperatures, but apparently these increases were completely negated by increases in cloud cover and rainfall related to the far above normal storm activity. Mean temperatures increased to above normal levels during early June when storm activity abruptly declined and remained absent until September.

Throughout the Salinas Valley, mean air temperatures are typically controlled by the origin of weather systems moving through the area. Storms of tropical origin are commonly accompanied by very warm, moist air. Cooler temperatures more typically experienced within the local area will accompany systems originating within the Gulf of Alaska region. The water year 1997-98 (October 1st through September 30th) was one of the wettest years ever for the Salinas Valley region.



Month	Normal	1997-98	% of Year
Nov	1.34	4.10	31
Dec	2.40	2.68	50
Jan	2.80	4.96	87
Feb	2.28	9.96	161
Mar	2.20	2.89	183
Apr	1.09	2.01	198
May	0.38	1.91	212
Jun	0.11	0.08	213
Jul	0.02	0.00	213
Aug	0.03	0.00	213
Sep	0.23	0.04	213
Oct	0.56	0.50	217
Total	13.43	29.13	

Figure 9: Salinas 1997-1998 monthly rainfall compared to normal

The entire Salinas Valley, with some slight variations, responded similarly to the El Niño influenced weather systems. November temperatures were warmer than normal due to the tropical origin of the weather systems affecting the area. During December, temperatures returned to near normal, as the majority of storms affecting the area originated within the Gulf of Alaska. The reverse was once again apparent during January as the storm track fluctuated but maintained a more tropical origin. From February through late May, temperatures fell to below normal as many heavy, El Niño enhanced, polar weather systems moved through the area. Temperatures increased to above normal in early June as the heavy rainfall ended and remained through the end of August. September temperatures were normal, falling to below normal in October. Figure 7 shows a comparison of 1997-1998 King City temperatures to the long-term averages.

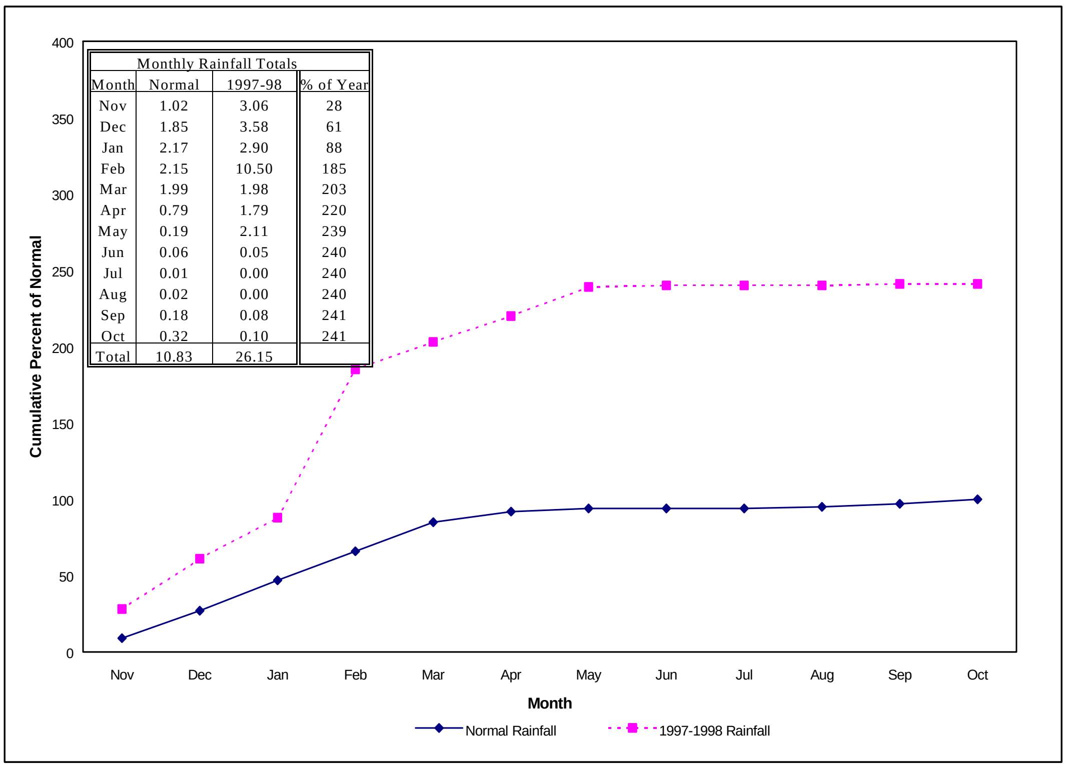
Climatic Data Summary

1997-1998 ET_o

Reference evapotranspiration, being largely regulated by humidity, is therefore directly related to temperature and rainfall variations. ET_o trends, much like temperature trends during 1997-98, were fairly constant throughout the Salinas Valley, with only minor irregularities occurring between Salinas and King City. ET_o during November was normal to slightly less than normal and essentially dropped to below normal throughout the remainder of winter and spring. Only during January at Salinas, did ET_o rise to above normal for a brief period. ET_o increased to above normal uniformly throughout the valley during July and August before returning to normal in September. October ET_o at Salinas dropped to below normal due to the cooler temperatures at that time, while King City remained normal. Figures 6 and 8 show comparisons of 1997-1998 ET_o to the long-term monthly averages established at Salinas and King City, respectively.

1997-1998 Rainfall

Unusually heavy rainfall during November 1997 became an early indication of things to come with rainfall totals in the 300 and 400 percent of normal range. This trend continued through the remainder of the winter and spring. The wettest month was February at both Salinas and King City with 9.96 inches and 10.50 inches respectively. The valley-wide rainfall during February averaged 462 percent of normal. The November 1997 through October 1998 El Niño enhanced rainfall totaled 29.13 inches, or 217 percent of normal at Salinas. Figure 9 shows a comparison of normal and 1997-1998 Salinas Airport rainfall activity. At King City, 26.15 inches, or 241 percent of normal was recorded. While annual rainfall records are not usually archived in a November through October format, it is certain that 1997-98 will qualify as one of the wettest years, if not the wettest, on the Central Coast. Figure 10 compares 1997-1998 King City rainfall with the long-term established normal.



Month	Normal	1997-98	% of Year
Nov	1.02	3.06	28
Dec	1.85	3.58	61
Jan	2.17	2.90	88
Feb	2.15	10.50	185
Mar	1.99	1.98	203
Apr	0.79	1.79	220
May	0.19	2.11	239
Jun	0.06	0.05	240
Jul	0.01	0.00	240
Aug	0.02	0.00	240
Sep	0.18	0.08	241
Oct	0.32	0.10	241
Total	10.83	26.15	

Figure 10: King City 1997-1998 monthly rainfall compared to normal

Climatic Data and Pumping

Total pumping during 1997-98 totaled 441,048 acre-feet, which qualified as the lowest, by a large margin, since records of pumping data began in 1993. In contrast, the highest was 598,139 acre-feet recorded in 1997. The large reduction in pumping is directly related to heavy rainfall experienced within the region. The plowing and planting normally undertaken during the mid winter months was postponed until field crews were able to enter the saturated fields. Consequently, amounts required for irrigation were minimal through the spring when rainfall activity returned to near normal levels.

Climatic Data Summary

It is apparent that increases and decreases in crop water requirements and pumping are closely related to similar fluctuations in temperature and ET_o. However, with the data currently available, no permanent ratios can be established to inter-relate temperature, ET_o, and pumping. Other associated variables, such as precipitation, soil type, and crop type, can significantly affect the ET_o data, and the frequency and accuracy of annual extraction reporting can significantly affect the pumping data. Although the connections may seem obvious, only loose associations can be drawn when relating these data. For 1998, it is apparent that an unusually wet year decreased pumping activity simply by removing some of the requirements for irrigation. Beyond this, higher humidity and lower temperatures associated with a higher number of rain days also significantly reduce plant requirements, ET_o and pumping.

Now you can access ETo and rainfall data on the World Wide Web. This Internet address will take you directly to the data selection screen: http://wwwdpla.water.ca.gov/cgi-bin/cimis/cimis/data/input_form

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If you would like more information regarding Monterey County Water Resources Agency's Ground Water Extraction Reporting and Water Conservation Plan Programs, please contact us at (831) 755-4860.

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