

# **ACTUAL EVAPOTRANSPIRATION ANALYSIS**

## **March 2022**

Prepared for  
**East Kaweah Groundwater Sustainability Agency**

Prepared by  
 **LAND IQ**  
2020 L Street, Ste 210  
Sacramento, CA  
Contact: Joel Kimmelshue  
916.265.6330

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## SUMMARY

**TABLE 1. SUMMARY OF DISTRICT ET AND PRECIPITATION (117,346 AC)**

	ET (ac-ft)	Precipitation (in)
Past 12 months	263,230	8.4
Prior water year (OCT 1 – MAR 31)	74,589	8.2
Prior calendar year (JAN 1 – MAR 31)	45,523	1.6

**TABLE 2. SENSORS USED IN DAILY AND MONTHLY ET<sub>A</sub> ANALYSIS BY CROP CATEGORY**

	Number of Active Stations	Number of Used Stations in model
Alfalfa	10	9
Almonds	24	11
Annuals	6	5
Citrus	15	14
Fallow/Native	7	5
Grapes	11	6
Olives	2	0
Pistachios	10	6
Pomegranates	1	0
Walnuts	1	1

**TABLE 3. PRECIPITATION MEASURED BY FIELD STATIONS**

Station ID	Source	March Precipitation (in)
<b>CIMIS #205: Coalinga</b>	CIMIS	0.93
<b>CIMIS #5: Shafter</b>	CIMIS	1.02
<b>CIMIS #15: Stratford</b>	CIMIS	1.06
<b>CIMIS #2: FivePoints</b>	CIMIS	0.83
<b>CIMIS #146: Belridge</b>	CIMIS	1.2
<b>CIMIS #39: Parlier</b>	CIMIS	1.37
<b>CIMIS #105: Westlands</b>	CIMIS	0.42
<b>CIMIS #80: Fresno State</b>	CIMIS	0.91
<b>CIMIS #182: Delano</b>	CIMIS	1.71
<b>CIMIS #169: Porterville</b>	CIMIS	0.84
<b>CIMIS #258: Lemon Cove</b>	CIMIS	1.09
<b>CIMIS #125: Arvin_Edison</b>	CIMIS	1.41
<b>LandIQ_EK_Full_Sumos</b>	Land IQ	1.08
<b>LandIQ_GK_Full_Murcotts</b>	Land IQ	1.09

CIMIS - California Irrigation Management Information System; CNRFC - California Nevada River Forecast Center; GHCN - Global Historical Climate Network.

## REMOTE SENSING RESULTS

TABLE 4. IMAGE DATES AND SOURCES

Date	Image Source
March 02, 2022	Landsat 9
March 02, 2022	Sentinel 2
March 07, 2022	Sentinel 2
March 10, 2022	Landsat 8
March 12, 2022	Sentinel 2
March 18, 2022	Landsat 9
March 22, 2022	Sentinel 2
March 27, 2022	Sentinel 2

TABLE 5. MONTHLY DISTRICT ET<sub>A</sub>

Unit	JAN	FEB	MAR
(mm)	23.8	34.0	60.5
(inch)	0.9	1.3	2.4
(AF)	9,148	13,080	23,288

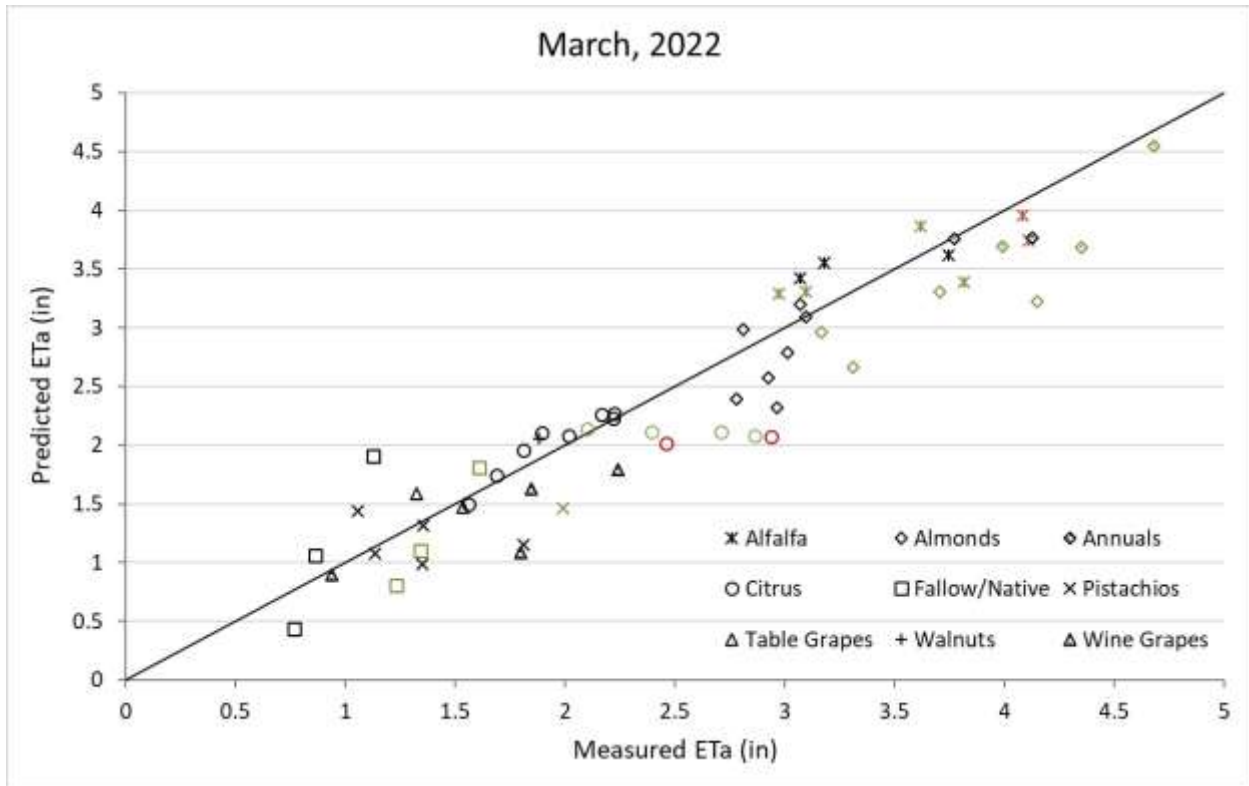
TABLE 6. MONTHLY FIELD ET<sub>A</sub>

ET <sub>A</sub> (in) Including Fallow				
	Field Size (ac)	JAN	FEB	MAR
<b>Maximum</b>	230.1	1.5	2.2	3.8
<b>Minimum</b>	0.1	0.4	0.3	0.4
<b>Average</b>	10	1.0	1.4	2.4
ET <sub>A</sub> (in) Excluding Fallow				
	Field Size (ac)	JAN	FEB	MAR
<b>Maximum</b>	230.1	1.5	2.2	3.8
<b>Minimum</b>	0.1	0.4	0.4	0.5
<b>Average</b>	10.3	1.0	1.4	2.4

**TABLE 7. MONTHLY DISTRICT PRECIPITATION**

Precipitation Unit	JAN	FEB	MAR
(mm)	0.9	11.5	28.7
(inch)	0.0	0.5	1.1
(AF)	353	4,417	11,049

**ACCURACY OF REMOTE SENSING RESULTS**



**FIGURE 1. MEASURED VERSUS PREDICTED ET<sub>A</sub> FOR THE MONTH. SYMBOL COLORS REPRESENT THE STATION TYPES (BLACK = FULL, GREEN = WATER IQ (WIQ), RED = TULE TECH)**

**TABLE 8. MEASURED VS. PREDICTED MONTHLY ET<sub>A</sub>**

R <sup>2</sup>	RMSE (IN)
0.9	0.4

Note: The R<sup>2</sup> value is the relative measure of fit of the observed data to the predicted result, where a value of 1 indicates a perfect fit. RMSE can be interpreted as the standard deviation, where a value of 0 indicates perfect fit to the observed data.