

ACTUAL EVAPOTRANSPIRATION ANALYSIS

February 2022

Prepared for
East Kaweah Groundwater Sustainability Agency

Prepared by
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SUMMARY

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

	ET (ac-ft)	Precipitation (in)
Past 12 months	256,613	8.4
Prior water year (OCT 1 – FEB 28)	51,290	7.0
Prior calendar year (JAN 1 – FEB 28)	22,223	0.5

TABLE 2. SENSORS USED IN DAILY AND MONTHLY ET_A ANALYSIS BY CROP CATEGORY

	Number of Active Stations	Number of Used Stations in model
Alfalfa	9	8
Almonds	24	12
Annuals	7	5
Citrus	14	9
Fallow/Native	5	5
Grapes	11	6
Olives	2	0
Pistachios	11	5
Pomegranates	1	0
Walnuts	1	1

TABLE 3. PRECIPITATION MEASURED BY FIELD STATIONS

Station ID	Source	February Precipitation (in)
CIMIS #205: Coalinga	CIMIS	0
CIMIS #5: Shafter	CIMIS	0.06
CIMIS #15: Stratford	CIMIS	0.11
CIMIS #2: FivePoints	CIMIS	0.06
CIMIS #146: Belridge	CIMIS	0.2
CIMIS #39: Parlier	CIMIS	0.15
CIMIS #105: Westlands	CIMIS	0.04
CIMIS #80: Fresno State	CIMIS	0.11
CIMIS #182: Delano	CIMIS	0.09
CIMIS #169: Porterville	CIMIS	0.24
CIMIS #258: Lemon Cove	CIMIS	0.43
CIMIS #125: Arvin_Edison	CIMIS	0.38
USC00044957	GHCN	0.64
LandIQ_EK_Full_Sumos	Land IQ	0.38
LandIQ_GK_Full_Murcotts	Land IQ	0.44

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
February 06, 2022	Landsat 8
February 10, 2022	Sentinel 2
February 25, 2022	Sentinel 2

TABLE 5. MONTHLY DISTRICT ET_A

Unit	JAN	FEB
(mm)	23.8	34.0
(inch)	0.9	1.3
(AF)	9,148	13,080

TABLE 6. MONTHLY FIELD ET_A

ET _a (in) Including Fallow			
	Field Size (ac)	JAN	FEB
Maximum	230.1	1.5	2.2
Minimum	0.1	0.4	0.3
Average	10	1.0	1.4
ET _a (in) Excluding Fallow			
	Field Size (ac)	JAN	FEB
Maximum	230.1	1.5	2.2
Minimum	0.1	0.4	0.4
Average	10.3	1.0	1.4

TABLE 7. MONTHLY DISTRICT PRECIPITATION

Precipitation Unit	JAN	FEB
(mm)	0.9	11.5
(inch)	0.0	0.5
(AF)	353	4,417

ACCURACY OF REMOTE SENSING RESULTS

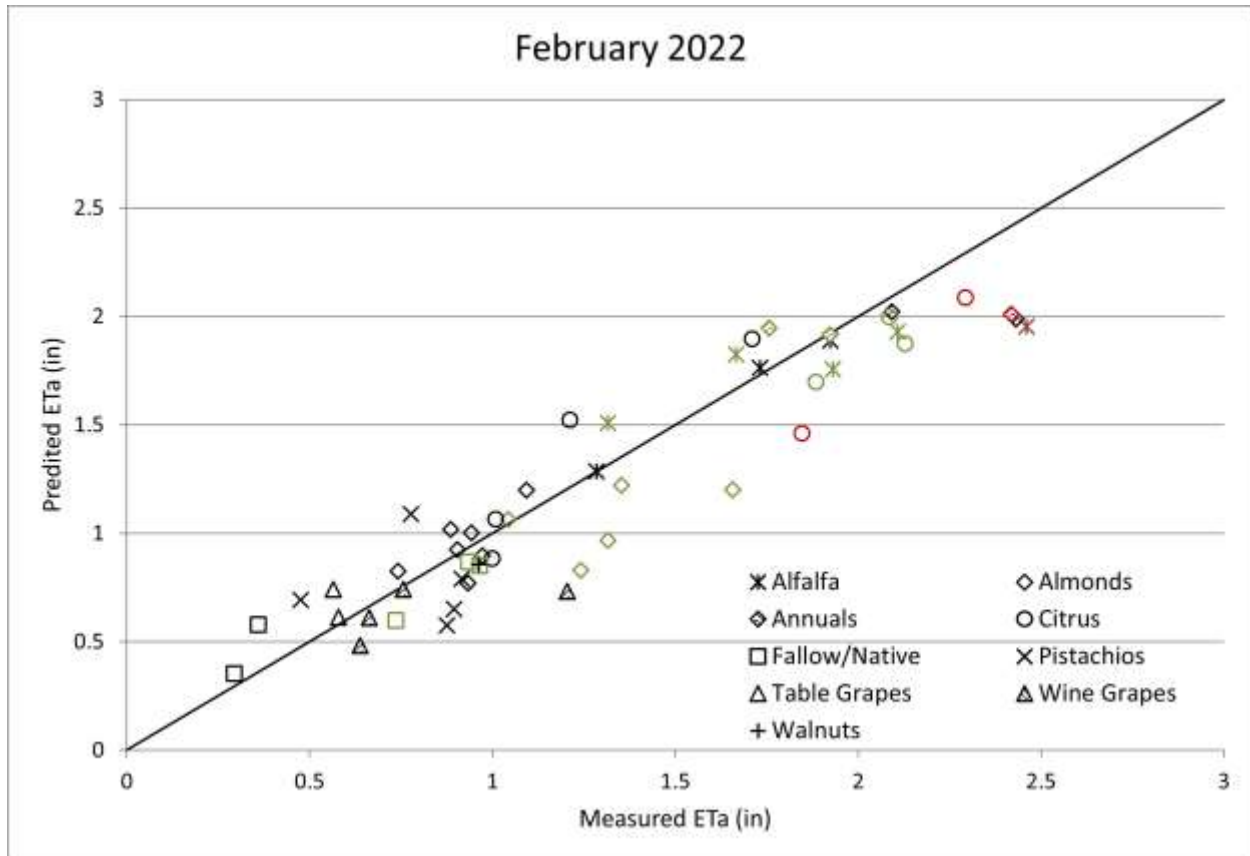


FIGURE 1. MEASURED VERSUS PREDICTED ET_A FOR THE MONTH. SYMBOL COLORS REPRESENT THE STATION TYPES (BLACK = FULL, GREEN = WATER IQ (WIQ), RED = TULE TECH)

TABLE 8. MEASURED VS. PREDICTED MONTHLY ET_A

R ²	RMSE (IN)
0.9	0.2

Note: The R² 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.