

ACTUAL EVAPOTRANSPIRATION ANALYSIS

October 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

DECEMBER 02, 2022

SUMMARY

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

	ET (ac-ft)	Precipitation (in)
Prior 12 months (Nov 1, 2021 - OCT 31, 2022)	257,305	7.0
Prior water year (OCT 1, 2021 - SEP 30, 2022)	257,436	8.6
Current water year to date (OCT 1, 2022 - OCT 31, 2022)	15,646	0.0
Prior water year to date (OCT 1, 2021 - OCT 31, 2022)	273,083	8.6

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	5	4
Almonds	12	10
Annuals	3	3
Citrus	14	13
Fallow/Native	8	8
Grapes	4	3
Olives	0	0
Pistachios	11	10
Pomegranates	1	0
Walnuts	2	2

TABLE 3. PRECIPITATION MEASURED BY FIELD STATIONS

Station ID	Source	October Precipitation (in)
CIMIS #205: Coalinga	CIMIS	0
CIMIS #5: Shafter	CIMIS	0
CIMIS #15: Stratford	CIMIS	0
CIMIS #2: FivePoints	CIMIS	0
CIMIS #39: Parlier	CIMIS	0
CIMIS #105: Westlands	CIMIS	0
CIMIS #80: Fresno State	CIMIS	0
CIMIS #182: Delano	CIMIS	0
CIMIS #169: Porterville	CIMIS	0
CIMIS #125: Arvin_Edison	CIMIS	0
LandIQ_EK_Full_Sumos	Land IQ	0
LandIQ_GK_Full_Murcotts	Land IQ	0

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
October 3, 2022	Sentinel-2
October 4, 2022	Landsat-8
October 8, 2022	Sentinel-2
October 12, 2022	Landsat-9
October 13, 2022	Sentinel-2
October 18, 2022	Sentinel-2
October 28, 2022	Landsat-9

TABLE 5. MONTHLY GSA ET_A

Unit	OCT, 2022
(mm)	40.9
(inch)	1.6
(AF)	15,727

TABLE 6. MONTHLY FIELD ET_A

ET _a (in) Including Fallow		
	Field Size (ac)	OCT, 2022
Maximum	230.1	3.3
Minimum	0.1	0.0
Average	10	1.9
ET _a (in) Excluding Fallow		
	Field Size (ac)	OCT, 2022
Maximum	230.1	3.3
Minimum	0.1	0.0
Average	10.3	2.1

TABLE 7. MONTHLY GSA PRECIPITATION

Precipitation Unit	OCT, 2022
(mm)	0.0
(inch)	0.0
(AF)	0

ACCURACY OF REMOTE SENSING RESULTS

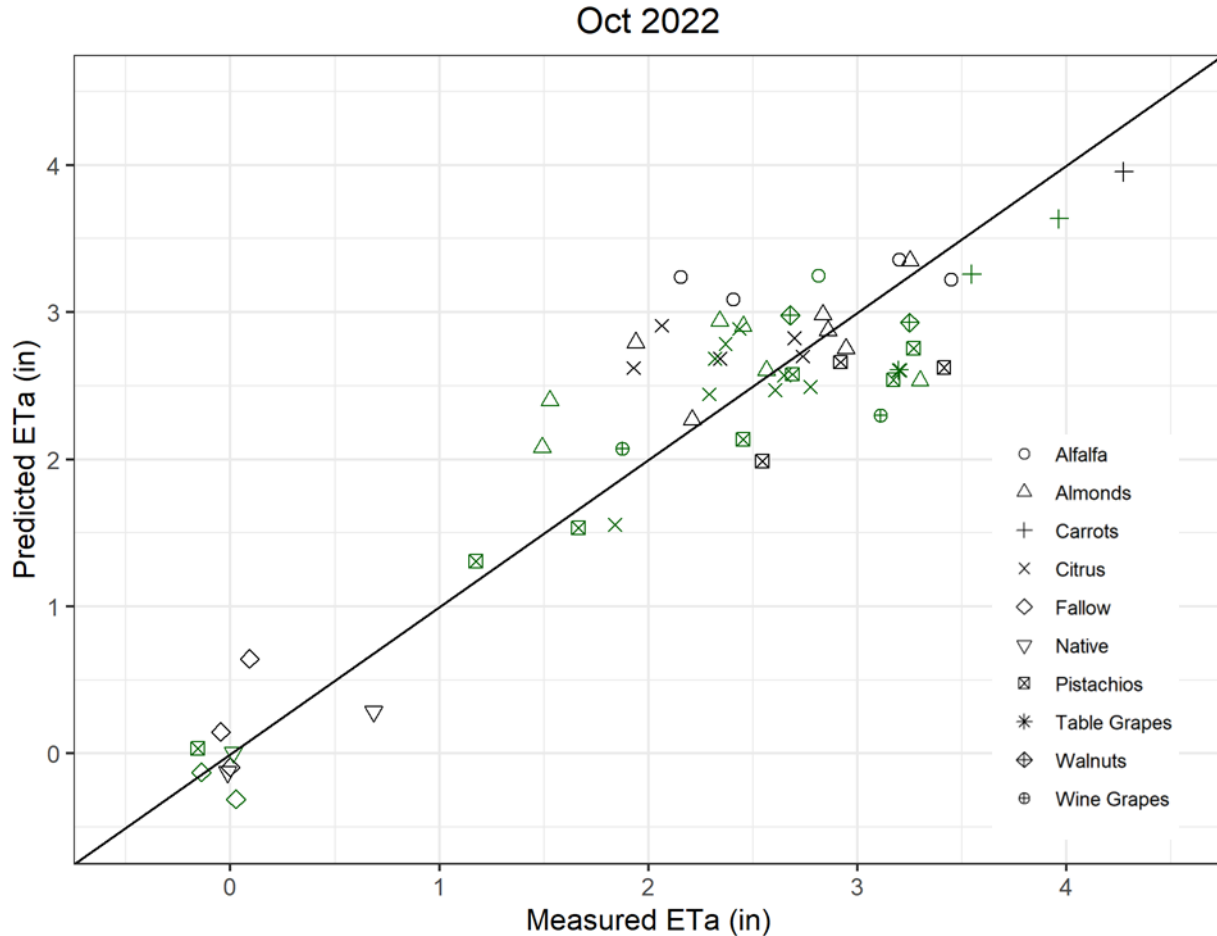


FIGURE 1. MEASURED VERSUS PREDICTED ET_A FOR THE MONTH. SYMBOL COLORS REPRESENT THE STATION TYPES (BLACK = FULL, GREEN = WATER IQ (WIQ))

TABLE 8. MEASURED VS. PREDICTED MONTHLY ET_A

R ²	RMSE (IN)
0.84	0.46

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 a perfect fit to the observed data.