

ACTUAL EVAPOTRANSPIRATION ANALYSIS

April 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	262,369	8.5
Prior water year (OCT 1 – APR 30)	100,829	8.5
Prior calendar year (JAN 1 – APR 30)	71,762	2.0

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	10	7
Almonds	23	22
Annuals	5	5
Citrus	15	14
Fallow/Native	6	5
Grapes	11	4
Olives	2	2
Pistachios	13	10
Pomegranates	1	1
Walnuts	1	0

TABLE 3. PRECIPITATION MEASURED BY FIELD STATIONS

Station ID	Source	April Precipitation (in)
CIMIS #205: Coalinga	CIMIS	0
CIMIS #5: Shafter	CIMIS	0.33
CIMIS #15: Stratford	CIMIS	0.08
CIMIS #146: Belridge	CIMIS	0.22
CIMIS #39: Parlier	CIMIS	0.21
CIMIS #105: Westlands	CIMIS	0.23
CIMIS #80: Fresno State	CIMIS	0.44
CIMIS #182: Delano	CIMIS	0.22
CIMIS #169: Porterville	CIMIS	0.31
CIMIS #258: Lemon Cove	CIMIS	0.28
CIMIS #125: Arvin_Edison	CIMIS	0.36
LandIQ_EK_Full_Sumos	Land IQ	0.47
LandIQ_GK_Full_Murcotts	Land IQ	0.31

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
April 01, 2022	Sentinel 2
April 06, 2022	Sentinel 2
April 27, 2022	Landsat 8

TABLE 5. MONTHLY DISTRICT ET_A

Unit	JAN	FEB	MAR	APR
(mm)	23.8	34.0	60.5	68.2
(inch)	0.9	1.3	2.4	2.7
(AF)	9,148	13,080	23,288	26,248

TABLE 6. MONTHLY FIELD ET_A

ET _a (in) Including Fallow					
	Field Size (ac)	JAN	FEB	MAR	APR
Maximum	230.1	1.5	2.2	3.8	5.3
Minimum	0.1	0.4	0.3	0.4	0.4
Average	10	1.0	1.4	2.4	2.6
ET _a (in) Excluding Fallow					
	Field Size (ac)	JAN	FEB	MAR	APR
Maximum	230.1	1.5	2.2	3.8	5.3
Minimum	0.1	0.4	0.4	0.5	0.5
Average	10.3	1.0	1.4	2.4	2.6

TABLE 7. MONTHLY DISTRICT PRECIPITATION

Precipitation Unit	JAN	FEB	MAR	APR
(mm)	0.9	11.5	28.7	8.6
(inch)	0.0	0.5	1.1	0.3
(AF)	353	4,417	11,049	3,314

ACCURACY OF REMOTE SENSING RESULTS

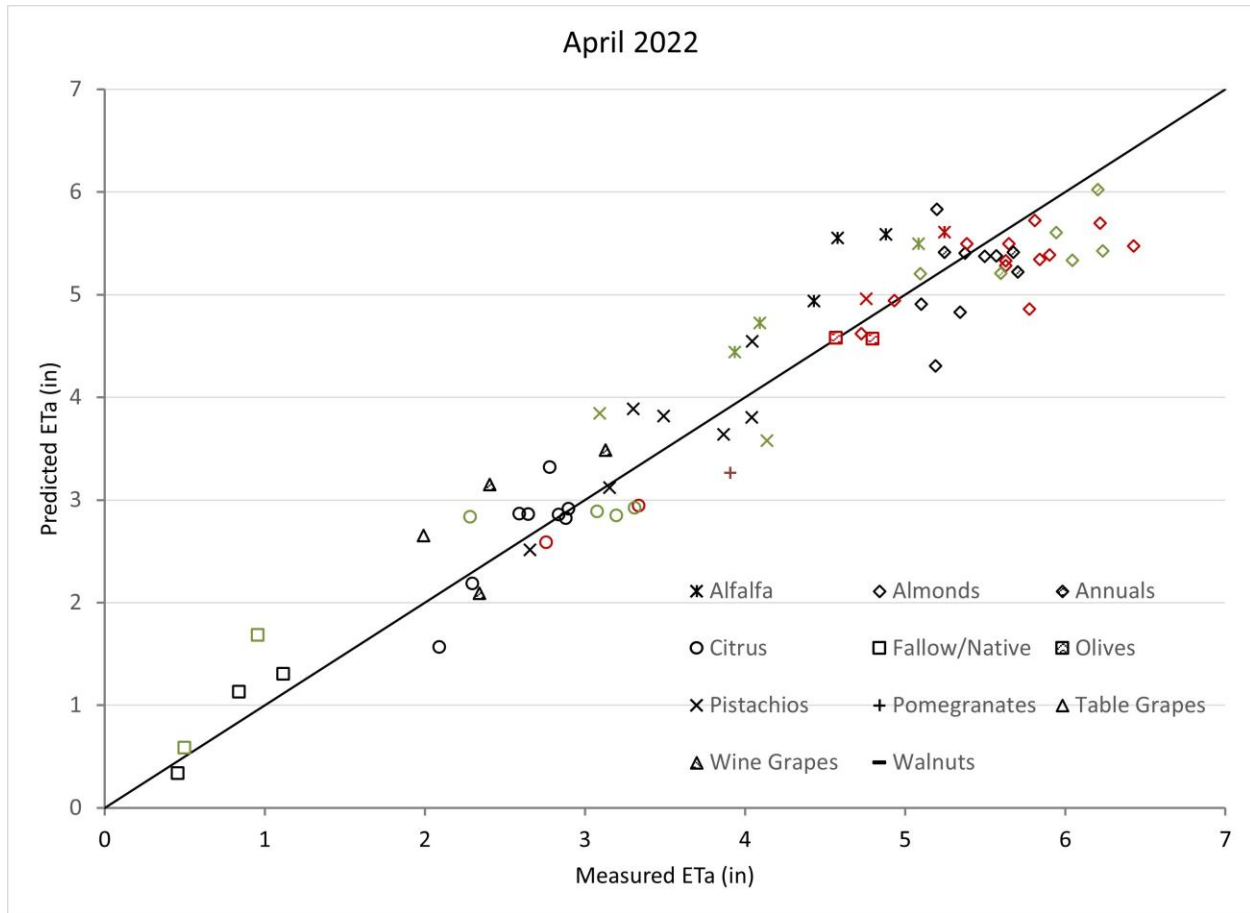


FIGURE 1. MEASURED VERSUS PREDICTED ET_A FOR THE MONTH. SYMBOL COLORS REPRESENT THE STATION TYPES (BLACK = FULL, GREEN = WATER IQ (WIQ), RED = TULE TECH)

TABLE 8. MEASURED VS. PREDICTED MONTHLY ET_A

R^2	RMSE (IN)
0.9	0.45

Note: The R^2 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.