Experimental Forecast of Reference Evapotranspiration for Short Canopy Vegetation
Product Description Document (PDD)

Part I – Mission Connection

a. Product Description – The experimental reference evapotranspiration forecast will be displayed as a graphic of gridded data and a supplemental tabular display of selected sites within the WFOs county warning area. The forecast is the expected amount of daily reference evapotranspiration in hundredths of an inch for the next 7 days and a total reference of evapotranspiration for the 7 day period. The forecast is calculated by standardizing on the short canopy vegetation (10 inch grasses or alfalfa) algorithm. This product will be issued twice a day around 5 am and pm local time.

   This experimental product is a significant enhancement to the original 7 - Day Evapotranspiration Forecast (official) by standardizing on one methodology and algorithm to generate field reference evapotranspiration. It also adds a tabular display of the data, includes a weekly total, and updates the graphical display from the previous evapotranspiration product.

b. Product Type – Regional (optional)

c. Purpose – The purpose of this experimental product is to provide our customers and partners with enhanced detail on the amount of reference evapotranspiration expected for the next seven days and a weekly total, for making better water usage decisions.

d. Audience – Water Management, Agricultural, Academia, Media and the General Public. Some of these groups include the California Department of Water Resources, the Bureau of Reclamation, the University of California, Davis, the California State Climatologist, the Oregon State Agricultural Research Station, the Southwest Washington/Northeast Oregon Agricultural Groups, and the University of Arizona Extension Service.

e. Presentation Format – All displays will occur via a web page interface. A supplemental table will be generated from the gridded data and posted along with the graphic. The numerical output will also be added to the existing Western Region Google Map Forecast Weather Tables. The forecast will be generated using a cron that triggers at 5 am/pm local time.

f. Feedback Method/Period – Feedback can be emailed to the Sacramento WFO Webmaster at:

   (W-sto.Webmaster@noaa.gov).

   Also a web survey link is posted on the graphic web page and is available for feed back at:

   http://www.weather.gov/survey/nws-survey.php?code=RESCV

The period of evaluation will be April 30, 2012 through April 29, 2013. At the end of the comment period, the product will be evaluated for national implementation.

g. Example URL of Graphical Display of Field Reference Evapotranspiration – http://www.wrh.noaa.gov/forecast/evap/FRET/FRET.php?wfo=sto

Part II – Technical Description

a. Format and Science Basis – This product is being developed to provide a daily reference evapotranspiration forecast to our customers for the next 7 days and a weekly total, using a common methodology for daily reference evapotranspiration equations for a short canopy. An algorithm is utilized, drawing upon existing NDFD gridded forecasts, to generate the forecast output.

b. Availability – The graphics, tabular text product, and forecast weather tables for Western Region will be available 24/7. They will be updated at least once a day by 5 am local time.

Example of Tabular Output of Field Reference Evapotranspiration

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EVAPOTRANSPIRATION TABLE FOR NORTHERN INTERIOR CA
NATIONAL WEATHER SERVICE SACRAMENTO CA
504 AM PDT FRI JUN 4 2010

SHASTA DAM 0.12 / 0.16 / 0.21 / 0.26 / 0.26 / 0.26 / 0.25 /
BURNEY 0.12 / 0.15 / 0.20 / 0.21 / 0.23 / 0.23 / 0.25 /
REDDING 0.14 / 0.17 / 0.21 / 0.27 / 0.26 / 0.27 / 0.25 /
RED BLUFF 0.16 / 0.18 / 0.21 / 0.28 / 0.25 / 0.27 / 0.21 /
CHICO 0.16 / 0.17 / 0.21 / 0.25 / 0.24 / 0.26 / 0.25 /
OROVILLE 0.16 / 0.17 / 0.23 / 0.24 / 0.23 / 0.26 / 0.27 /
MARYSVILLE 0.17 / 0.18 / 0.23 / 0.25 / 0.23 / 0.25 / 0.27 /
DOWNTOWN SACRAMENTO 0.17 / 0.20 / 0.25 / 0.26 / 0.25 / 0.26 / 0.28 /
SACRAMENTO EXECUTIVE 0.16 / 0.20 / 0.25 / 0.26 / 0.25 / 0.26 / 0.29 /
TRAVIS 0.16 / 0.21 / 0.27 / 0.26 / 0.27 / 0.27 / 0.29 /
STOCKTON 0.20 / 0.25 / 0.30 / 0.30 / 0.31 / 0.32 / 0.36 /
MODESTO 0.24 / 0.28 / 0.33 / 0.33 / 0.32 / 0.33 / 0.37 /
ALDER SPRINGS 0.10 / 0.15 / 0.19 / 0.21 / 0.24 / 0.25 / 0.21 /
LAKEPORT 0.12 / 0.16 / 0.23 / 0.25 / 0.28 / 0.27 / 0.28 /
PARADISE 0.14 / 0.17 / 0.21 / 0.24 / 0.24 / 0.25 / 0.24 /
GRASS VALLEY 0.13 / 0.16 / 0.21 / 0.21 / 0.23 / 0.23 / 0.23 /
SUTTER HILL 0.14 / 0.18 / 0.23 / 0.25 / 0.25 / 0.25 / 0.29 /
QUINCY 0.14 / 0.21 / 0.24 / 0.23 / 0.25 / 0.25 / 0.28 /
CHESTER 0.12 / 0.16 / 0.20 / 0.21 / 0.24 / 0.23 / 0.25 /
BLUE CANYON 0.11 / 0.17 / 0.21 / 0.21 / 0.22 / 0.22 / 0.23 /
AUBURN CIMIS 0.14 / 0.17 / 0.21 / 0.23 / 0.24 / 0.23 / 0.26 /
BROWNS VALLEY CIMIS 0.14 / 0.17 / 0.22 / 0.23 / 0.24 / 0.26 / 0.27 /
BRYTE CIMIS 0.17 / 0.19 / 0.25 / 0.26 / 0.24 / 0.26 / 0.28 /
BUNTINGVILLE CIMIS 0.18 / 0.20 / 0.27 / 0.24 / 0.27 / 0.28 / 0.31 /
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CAMINO CIMIS 0.13 / 0.18 / 0.22 / 0.22 / 0.23 / 0.25 / 0.26 /
COLUSA CIMIS 0.16 / 0.17 / 0.22 / 0.26 / 0.23 / 0.25 / 0.24 /
DAVIS CIMIS 0.16 / 0.19 / 0.25 / 0.25 / 0.23 / 0.25 / 0.27 /
DENAIR2 CIMIS 0.24 / 0.29 / 0.34 / 0.32 / 0.32 / 0.32 / 0.37 /
DIXON CIMIS 0.17 / 0.20 / 0.26 / 0.25 / 0.25 / 0.26 / 0.29 /
DURHAM CIMIS 0.17 / 0.17 / 0.22 / 0.26 / 0.22 / 0.26 / 0.25 /
ESPARTO CIMIS 0.16 / 0.18 / 0.26 / 0.26 / 0.24 / 0.27 / 0.28 /
FAIR OAKS CIMIS 0.17 / 0.19 / 0.24 / 0.26 / 0.24 / 0.25 / 0.28 /
GERBERCIMIS 0.16 / 0.18 / 0.21 / 0.28 / 0.24 / 0.26 / 0.21 /
HASTINGS TRACT EAST CIMIS 0.18 / 0.23 / 0.28 / 0.28 / 0.29 / 0.29 / 0.31 /
LODI WEST CIMIS 0.17 / 0.22 / 0.28 / 0.28 / 0.29 / 0.30 / 0.33 /
MANTECA CIMIS 0.20 / 0.25 / 0.31 / 0.31 / 0.30 / 0.32 / 0.35 /
MCARTHUR CIMIS 0.13 / 0.15 / 0.21 / 0.21 / 0.23 / 0.24 / 0.27 /
MODESTO CIMIS 0.22 / 0.26 / 0.31 / 0.31 / 0.31 / 0.32 / 0.37 /
NICOLAUS CIMIS 0.17 / 0.18 / 0.24 / 0.26 / 0.23 / 0.25 / 0.28 /
OAKDALE CIMIS 0.24 / 0.27 / 0.33 / 0.33 / 0.32 / 0.33 / 0.37 /
ORLAND CIMIS 0.16 / 0.17 / 0.21 / 0.28 / 0.25 / 0.27 / 0.22 /
PATTERSON CIMIS 0.22 / 0.26 / 0.31 / 0.31 / 0.32 / 0.32 / 0.37 /
SUISUN VALLEY CIMIS 0.15 / 0.20 / 0.25 / 0.25 / 0.25 / 0.25 / 0.28 /
TRACY CIMIS 0.19 / 0.23 / 0.30 / 0.31 / 0.29 / 0.31 / 0.33 /
TWITCHELL ISLAND CIMIS 0.19 / 0.24 / 0.30 / 0.29 / 0.31 / 0.32 / 0.33 /
WINTERS CIMIS 0.16 / 0.19 / 0.26 / 0.25 / 0.24 / 0.26 / 0.29 /