

DOCUMENT FOR READING NOAA/ESRL TEMPERATURE TOWER DATA

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The purpose of this short document is to facilitate reading of the NOAA/ESRL tower data that is now available for the Ukiah Valley area. The NOAA Earth System Research Laboratory, Physical Sciences Division serves the meteorological tower data as part of their larger Hydrometeorological Test Bed (HMT) program that provides additional data for winter storms (atmospheric river "AR"). For us, the tower data provide temperature at three different levels: "Datalogger", i.e. near surface, 2m, and 11m. For a program description, and how to access their data from all over the U.S. from their other networks, the general web site is:

<http://www.esrl.noaa.gov/psd/data/obs/datadisplay/>

From that page, Fox Weather is currently harvesting Hopland data (from northeast of town). Other tower stations from the Ukiah Valley will be added to the Fox Weather web page at www.foxweather2.com/bannermendo.html for other sites that may be useful to the grower community.

The tower data is only roughly comparable to the lowest level portions of Fox Weather MtnRT[®] Spot Forecast data. Our data levels are: near-surface 1-2 m, 4m, and higher ones at 50m and 300m above terrain. Fox Weather's Spot Forecast data would correspond most closely to the tower's "Datalogger" for surface. The tower 11m data is between the Spot Forecast's 4m and 50m levels. The tower 11m data is closest but not well comparable to MtnRT's forecast elevation of 4m, but may be comparable to the 4m forecast during low inversion situations.

A sample of the tower data is below:

Datalogger ID	Year (end time of average)	Julian Day (end time of average)	HoursMinutes (end time of average)	Battery Voltage (volts)	Temperature (C) 2m	Temperature (C) 11m	Datalogger Temperature (C)
101	2015	59	1350	12.18	2.303	3.281	0.712
101	2015	59	1352	12.18	2.229	3.258	0.682
101	2015	59	1354	12.17	2.55	3.304	0.648
101	2015	59	1356	12.17	2.306	3.236	0.612
101	2015	59	1358	12.17	1.152	3.096	0.59

The data is logged (reported) every 2 minutes. Time is UTC so the normal time of minimum temperature is between 1200 (4am PST, 5am PDT), and 1500 (7am PST, 8am PDT). A table is shown on our 'bannermendo.html' web page for converting from UTC to PST.

For the columns, the most important, besides the Year, Day (number of days past Jan 1 of this year) and Time are the three temperatures. As mentioned, the "Datalogger" is near the ground, about 1 m height, so is coldest. In this case, it shows a low this morning at Hopland of 0.5C or 33.5F , 2m temperature at 34F and 11m at 39F.

This data is somewhat useful for assessing the suitability of wind machines for frost protection. It would be more complete if it had observed dew point information at 2m and 11m as well.

This little document does not answer all the questions, but hopefully is a sufficient introduction to help use this observed data set along with the Spot Forecasts.



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