Progress Report for Project 5-300430, Yampa/White Roundtable Lysimeter Project: June 2014

Wendy Ryan, Colorado Climate Center

Weather Station

Data collection continues at the HYD01 (Hayden) CoAgMet station located at Carpenter Ranch (Figure 1). The station received annual operations and maintenance in April 2014 to ensure properly working sensors for the upcoming growing season. The graphs below show hourly data from Hayden displayed on the CoAgMet website (coagmet.colostate.edu).

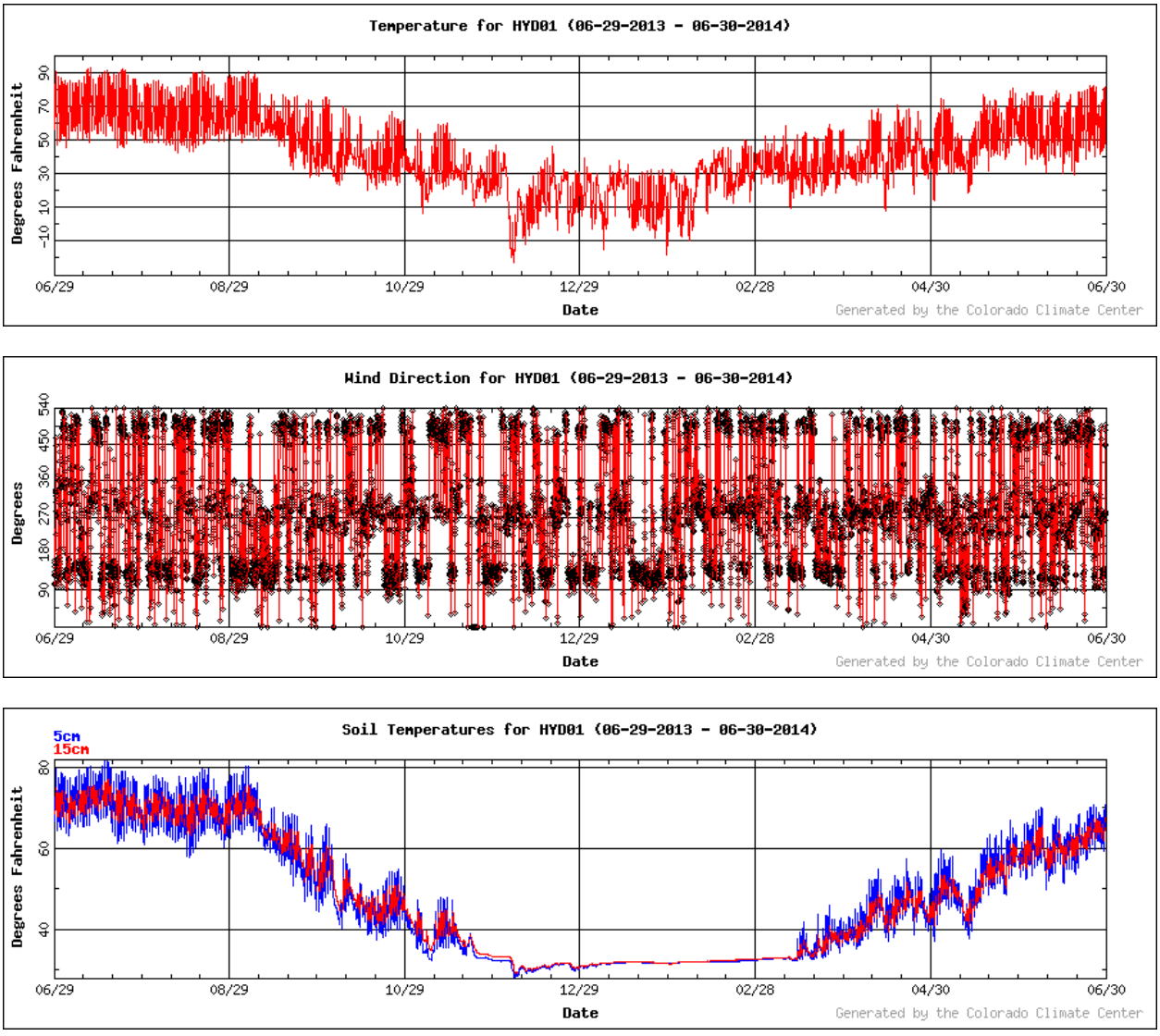

Figure 1: Hourly temperature, wind direction and soil temperature from the Hayden CoAgMet station for June 2013-June 2014.

Lysimeter Plots

The lysimeter plots are installed and being measured throughout the summer by Carpenter Ranch interns. The data has not yet been made available for this growing season. Grasses are still being established after the disturbance around the lysimeter plots from installation.

Carpenter Ranch again had interns run the lysimeter plots during the growing season. The method used was first weigh each dry lysimeter so that the difference from the last "wet" reading to the "dry" reading can be determined. Then each lysimeter is filled with roughly 5 gallons of water and allowed to drain to field capacity (about 3-4 hours). After that time, each lysimeter was then weighed again so that the "wet" weight is known for ET calculations.

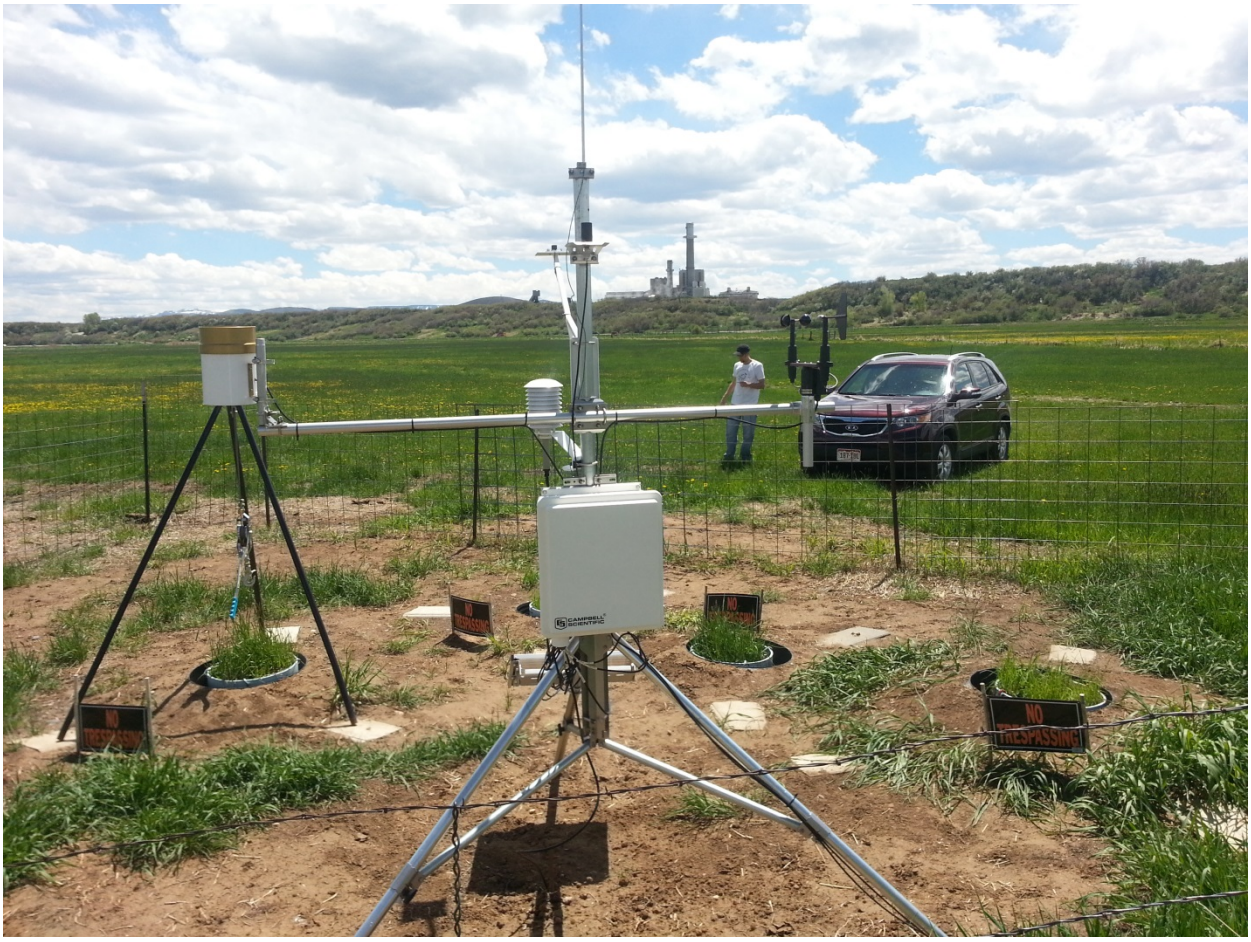

Figure 2: Site photo (looking South) with the lysimeter plots behind the station. Note the established grass within the lysimeter plots.

From the weather data collected by the automated station, reference ET can be calculated. The calculated ET from the station for growing seasons 2013 and 2014 is shown in Figure 3. Precipitation is also included in the graphic for each year. 2013 is shown in green and 2014 is shown in blue. Note the higher ET values in 2013 when it was warmer and dryer in the area. The two growing seasons started off fairly similar in the early season, but deviated as the season progressed. ET was suppressed in 2014 starting about July when the enhanced North American monsoon became active bringing frequent rounds of precipitation. Once lysimeter data is compiled, it will be used along with the Reference ET data to calculate crop coefficients for the hay meadows of Hayden.

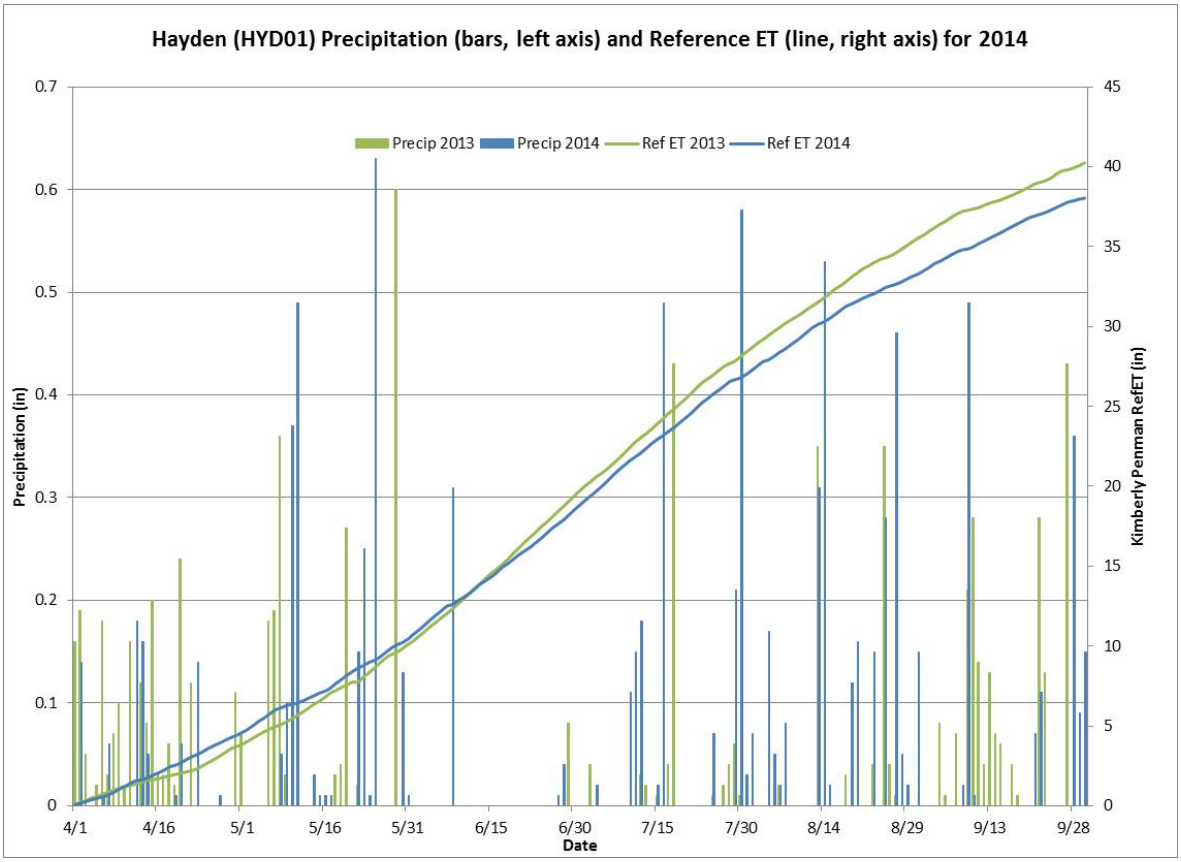

Figure 3: Kimberly-Penman reference ET and precipitation from the Hayden CoAgMet station for 2013 and 2014.