

Evaporation and Transpiration (ET) Data Sources Summary

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Evaporation and transpiration (ET) data is used to determine crop and lawn watering requirements; such data can be difficult to find for a given location. Estimating ET is done using research publications and actual weather conditions. The following list provides sources for such information. Internet links are provided in the endnotes. There are currently 224 active sites providing up-to-date ET information in Utah. There are 136 inactive sites having historical data. The inactive sites are listed in the first two of the Reports and Publications below. This ET data summary is available as a separate downloadable document at

<http://www.water.utah.gov/Planning/OtherReports.asp>

Real-time Data

- Natural Resources Conservation Service (NRCS) has a Soil Climate Analysis Network (SCAN) that provides real-time ET data. There are 34 stations in Utah that are distributed throughout the state.¹
- AgriMet (*Agricultural and Meteorology*) is a satellite-based network of automated agricultural weather stations operated by the Bureau of Reclamation. Weather station owners can contract with Reclamation for station maintenance; they do quality work. There are 23 stations in Utah.²
- MesoWest at the University of Utah provides current weather conditions for 23 sites throughout Utah from which ET calculations can be made.³
- Utah Division of Water Resources has 10 ET sites along the Wasatch Mountains.⁴
- Utah Division of Water Resources has an Excel spreadsheet with 117 Utah Department of Transportation (UDOT) weather stations.⁵
- Sevier River Water Users Association has five ET sites.⁶
- Emery Water Conservancy District has three ET sites.⁷
- Rain Bird company has products that automatically manage watering based on real-time ET data. They have a network of nine weather stations in Utah.⁸
- There is an extensive listing of weather and related data at Utah Hydrometeorological Networks.⁹
- NRCS recently developed a web-based tool that allows users to create custom reports using NRCS and external data sources. This *Report Generator* uses long-term snowpack, precipitation, reservoir, streamflow, and soils data from a variety of quality-controlled sources.¹⁰

Reports and Publications

- *Crop and Wetland Consumptive Use and Open Water Surface Evaporation for Utah* is a comprehensive report published by Utah State University in 2011; it includes two appendices.¹¹ This report is intended to be used in conjunction with Utah Agricultural Experiment Station Research Report # 145, *Consumptive Use of Irrigated Crops in Utah (1994)*.¹²
- The Utah Climate Center at Utah State University¹³ provides a list of 31 evaporation stations in Utah. Monitoring at each site began and ended at different times, thus the period of record varies between sites. Beginning years vary from 1862 to 1987; ending years vary from 1953 to 2005.¹⁴ No monitoring has been made at these stations since 2005.
- *Sprinklers, Crop, Water Use and Irrigation Time* publications are available for most Utah counties.¹⁵

¹ <http://www.wcc.nrcs.usda.gov/scan/Utah/utah.html> Retrieved January 9, 2014. Select the desired site to obtain data.

² <http://www.usbr.gov/pn/agrimet/> Retrieved January 6, 2014. The stations collect data required for modeling ET. Measured parameters include air temperature, precipitation, solar radiation, wind speed and direction, and relative humidity.

³ <http://mesowest.utah.edu/cgi-bin/droman/mesomap.cgi?state=UT&rawsflag=3> Retrieved January 9, 2014. Included are Current Temperature, Current Relative Humidity, Current Dew Point, Current Wind Speed, Barometric Pressure and 20 other parameters.

⁴ <http://www.slowtheflow.org/> Click on Lawn Watering Guide, Click on Utah state map, Select the station of interest.

⁵ These UDOT websites were extracted from the thousands listed at http://mesowest.utah.edu/cgi-bin/droman/meso_station.cgi January, 2014.

⁶ <http://www.sevierriver.org/> Retrieved January 9, 2014. Under “Weather” select the following sites: Gunnison, Elsinore, Richfield Airport, Scipio Weather and Sutherland Weather.

⁷ <http://www.ewcd.org/> Retrieved January 9, 2014. Under “Weather” select the following sites: Huntington North Weather, Little Creek Weather and Molen Weather.

⁸ http://www.rainbird.com/landscape/products/controllers/ETmanager_WRSP.htm Retrieved January 8, 2014.

⁹ <http://www.eol.ucar.edu/projects/hydrometnet/utah/> Retrieved January 13, 2014.

¹⁰ http://www.wcc.nrcs.usda.gov/report_generator/report_generator_landing.htm Retrieved January 23, 2014.

¹¹ <http://uaes.usu.edu/htm/publications/research-reports/research-report-no-212/> Retrieved January 7, 2014.

¹² <http://waterights.utah.gov/docSys/v912/a912/a912044e.pdf> Retrieved January 10, 2014. This publication lists 105 Utah National Weather Service stations having temperature and precipitation records from 1961 to 1990 located throughout Utah.

¹³ <http://climate.usurf.usu.edu/> Retrieved January 7, 2014.

¹⁴ <http://www.wrcc.dri.edu/htmlfiles/westevap.final.html#UTAH> Retrieved January 6, 2014.

¹⁵ Summit County:

http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1153&context=extension_histall

Sanpete County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1173&context=extension_histall

Iron County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1159&context=extension_histall

Millard County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1156&context=extension_histall

Salt Lake County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1169&context=extension_histall

Weber County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1158&context=extension_histall

San Juan County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1178&context=extension_histall

Garfield County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1154&context=extension_histall

Grand County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1166&context=extension_histall

Utah County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1172&context=extension_histall

Wayne County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1161&context=extension_histall

Washington County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1177&context=extension_histall

Juab County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1167&context=extension_histall

Beaver County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1168&context=extension_histall

Kane County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1155&context=extension_histall

Wasatch County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1170&context=extension_histall

Duchesne County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1175&context=extension_histall
Cache County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1162&context=extension_histall
Morgan County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1164&context=extension_histall
Box Elder County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1165&context=extension_histall
Tooele County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1163&context=extension_histall
Piute County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1160&context=extension_histall
Davis County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1157&context=extension_histall
Sevier County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1176&context=extension_histall
Uintah & Daggett Counties:
http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1171&context=extension_histall
Duchesne County: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1174&context=extension_histall
Carbon & Emery Counties: http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1151&context=extension_histall