The CoAgMet Network: Overview, History, Why we Measure, and can we keep it going?

Nolan Doesken, Wendy Ryan, John Kleist
Colorado Climate Center
Colorado State University
History

CoAgMet -- 20 years of Motivated Collaboration

- Common vision (CSU -- USDA-ARS)
- shared resources ($1 million investment)
- a willing host (CSU Colorado Climate Center)
- Organization Support (Colorado Agricultural Experiment Station)
- generous volunteer technical support
Cup anemometer and wind vane: Wind speed, direction and gusts

Pyranometer: Solar radiation

Temperature/Humidity sensor in radiation shield

Tipping bucket rain gage

Solar panel powers the station

Data collection platform (DCP)

Soil temperatures

Above all else facing South

2 m 2 m 1-3 m 5/15 cm
Overview

- CoAgMet has gradually grown to over 60 stations.
- Data are collected on hourly and daily time steps and include: temperature, humidity, solar radiation, wind speed and direction, precipitation and soil temperatures.
- Data and graphics are available online: ccc.atmos.colostate.edu/~coagmet
Easily accessible weather and climate data primarily from Colorado’s irrigated croplands

Solar Radiation for FTC03 (12-31-2008 - 12-31-2009)

Generated by the Colorado Climate Center


Generated by the Colorado Climate Center
CoAgMet Website Demonstration
The climate of Colorado is fascinating in every way. Being located as a mid-latitude interior continental state (and having the highest elevation in the United States), combined with complex topography, results in dramatic climate differences from place to place and from year to year. From the Great Plains of eastern Colorado to the high peaks of the Rockies and the Continental Divide, to the valleys, canyons and plateaus of western Colorado, the various climates are each very different.

This website is hosted and maintained by the Colorado Climate Center, which is part of the Department of Atmospheric Science at Colorado State University. Several sources of climate data are featured, along with links to other resources. Please contact us if you have any questions or need additional assistance.

Welcome to the Colorado Climate Center!
Hourly Climate Data Plots

CoAgMet Homepage

- **About CoAgMet**
  A brief history of how CoAgMet came to be.

- **CoAgMet Crop Water Use (ET) Access**
  Page for obtaining crop and turf water use information (ET).

- **Evapotranspiration Reports**
  ETRs are daily reports for selected stations by region.

- **Station Description**
  A description of a typical CoAgMet station.

- **Station Index**
  Metadata on all of the stations on the CoAgMet network.

- **Monthly Summaries**
  Interactive access to the daily data set for a particular station and selected months.

- **Daily Summaries (all stations)**
  Daily summary files are formatted to display selected parameters for all stations.

- **Hourly Data Access**
  Interactive access to the hourly data set for a particular station and selected days.

- **Hourly Data Plots**
  Plots of temperature, humidity and wind for all CoAgMet stations.

- **Raw Data Access**
  Direct access to the raw data. Select hourly or daily data from our archives.

- **Map of CoAgMet Stations**
  A map showing CoAgMet station locations along with images.

- **Crop Management Decision Support**
  A link to the Barley Expert System and CropFlex programs.
Hourly Climate Data Plots

Greeley weekly temperature and precipitation

Temperature

Temperature for GLY03 (06-09-2007 - 06-16-2007)

Relative Humidity

Relative Humidity for GLY03 (06-09-2007 - 06-16-2007)
Daily Climatic Summary

CoAgMet Homepage

- **About CoAgMet**
  A brief history of how CoAgMet came to be.

- **CoAgMet Crop Water Use (ET) Access**
  Page for obtaining crop and turf water use information (ET).

- **Evapotranspiration Reports**
  ETRs are daily reports for selected stations by region.

- **Station Description**
  A description of a typical CoAgMet station.

- **Station Index**
  Metadata on all of the stations on the CoAgMet network.

- **Monthly Summaries**
  Interactive access to the daily data set for a particular station and selected months.

- **Daily Summaries (all stations)**
  Daily summary files are formatted to display selected parameters for all stations.

- **Hourly Data Access**
  Interactive access to the hourly data set for a particular station and selected days.

- **Hourly Data Plots**
  Plots of temperature, humidity and wind for all CoAgMet stations.

- **Raw Data Access**
  Direct access to the raw data. Select hourly or daily data from our archives.

- **Map of CoAgMet Stations**
  A map showing CoAgMet station locations along with images.

- **Crop Management Decision Support**
  A link to the Barley Expert System and CropFlex programs.
Daily Climatic Summary

CoAgMet Daily Summary - 07/26/2007

<table>
<thead>
<tr>
<th>Sta</th>
<th>Mon</th>
<th>Day</th>
<th>Tmax Temp</th>
<th>Tmin Temp</th>
<th>Vapor Press</th>
<th>Solar Rad</th>
<th>Prec</th>
<th>Wind Gust</th>
<th>Wind Run Temp</th>
<th>Run Wind Temp</th>
<th>Precip</th>
<th>Rain</th>
<th>Snow</th>
<th>Soil</th>
<th>Min</th>
<th>Grow</th>
<th>P-Kim</th>
<th>P-Mon</th>
</tr>
</thead>
<tbody>
<tr>
<td>akr02</td>
<td>7</td>
<td>26</td>
<td>86.6</td>
<td>62.9</td>
<td>15.05</td>
<td>541</td>
<td>0.00</td>
<td>17.7</td>
<td>122</td>
<td>20.6</td>
<td>30.7</td>
<td>1776</td>
<td>0.265</td>
<td>0.298</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c121</td>
<td>7</td>
<td>26</td>
<td>86.1</td>
<td>64.0</td>
<td>15.40</td>
<td>525</td>
<td>0.00</td>
<td>24.5</td>
<td>157</td>
<td>28.7</td>
<td>1929</td>
<td>0.318</td>
<td>0.334</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cvn01</td>
<td>7</td>
<td>26</td>
<td>89.6</td>
<td>62.7</td>
<td>16.42</td>
<td>497</td>
<td>0.00</td>
<td>16.2</td>
<td>211</td>
<td>29.5</td>
<td>1225</td>
<td>0.298</td>
<td>0.309</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b1001</td>
<td>7</td>
<td>26</td>
<td>94.8</td>
<td>63.1</td>
<td>18.58</td>
<td>554</td>
<td>0.21</td>
<td>19.0</td>
<td>157</td>
<td>81.0</td>
<td>31.0</td>
<td>1977</td>
<td>0.399</td>
<td>0.366</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c1101</td>
<td>7</td>
<td>26</td>
<td>93.9</td>
<td>61.8</td>
<td>16.92</td>
<td>482</td>
<td>0.63</td>
<td>21.3</td>
<td>154</td>
<td>21.9</td>
<td>1885</td>
<td>0.327</td>
<td>0.358</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cd01</td>
<td>7</td>
<td>26</td>
<td>86.5</td>
<td>54.6</td>
<td>14.59</td>
<td>585</td>
<td>0.02</td>
<td>6.5</td>
<td>23</td>
<td>28.7</td>
<td>1793</td>
<td>0.231</td>
<td>0.203</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cto1</td>
<td>7</td>
<td>26</td>
<td>80.0</td>
<td>51.0</td>
<td>12.93</td>
<td>377</td>
<td>0.11</td>
<td>18.3</td>
<td>90</td>
<td>28.7</td>
<td>1373</td>
<td>0.193</td>
<td>0.208</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cr02</td>
<td>7</td>
<td>26</td>
<td>80.0</td>
<td>49.9</td>
<td>13.10</td>
<td>404</td>
<td>0.01</td>
<td>19.6</td>
<td>94</td>
<td>30.3</td>
<td>1389</td>
<td>0.204</td>
<td>0.215</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cto2</td>
<td>7</td>
<td>26</td>
<td>89.4</td>
<td>60.0</td>
<td>15.23</td>
<td>574</td>
<td>0.08</td>
<td>26.5</td>
<td>113</td>
<td>21.7</td>
<td>1864</td>
<td>0.292</td>
<td>0.318</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d101</td>
<td>7</td>
<td>26</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d201</td>
<td>7</td>
<td>26</td>
<td>86.1</td>
<td>56.3</td>
<td>13.45</td>
<td>719</td>
<td>0.19</td>
<td>24.4</td>
<td>144</td>
<td>21.8</td>
<td>1628</td>
<td>0.346</td>
<td>0.358</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eac01</td>
<td>7</td>
<td>26</td>
<td>86.9</td>
<td>61.8</td>
<td>13.53</td>
<td>483</td>
<td>0.24</td>
<td>19.5</td>
<td>173</td>
<td>27.6</td>
<td>1883</td>
<td>0.340</td>
<td>0.324</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f021</td>
<td>7</td>
<td>26</td>
<td>89.7</td>
<td>61.6</td>
<td>16.19</td>
<td>561</td>
<td>0.04</td>
<td>15.3</td>
<td>61</td>
<td>22.4</td>
<td>2049</td>
<td>0.275</td>
<td>0.265</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ft01</td>
<td>7</td>
<td>26</td>
<td>86.3</td>
<td>59.1</td>
<td>15.30</td>
<td>466</td>
<td>0.16</td>
<td>15.2</td>
<td>68</td>
<td>33.2</td>
<td>1736</td>
<td>0.244</td>
<td>0.225</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ft03</td>
<td>7</td>
<td>26</td>
<td>85.1</td>
<td>60.6</td>
<td>16.20</td>
<td>455</td>
<td>0.03</td>
<td>18.1</td>
<td>117</td>
<td>31.4</td>
<td>1740</td>
<td>0.268</td>
<td>0.261</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ftt01</td>
<td>7</td>
<td>26</td>
<td>***</td>
<td>0.00</td>
<td>***</td>
<td>529</td>
<td>0.23</td>
<td>16.0</td>
<td>64</td>
<td>76.1</td>
<td>0.00</td>
<td>0.008</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ftm01</td>
<td>7</td>
<td>26</td>
<td>89.5</td>
<td>62.5</td>
<td>17.37</td>
<td>507</td>
<td>0.00</td>
<td>12.7</td>
<td>106</td>
<td>32.5</td>
<td>1951</td>
<td>0.279</td>
<td>0.278</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fwl1</td>
<td>7</td>
<td>26</td>
<td>93.7</td>
<td>64.7</td>
<td>15.10</td>
<td>565</td>
<td>0.26</td>
<td>27.2</td>
<td>144</td>
<td>22.8</td>
<td>2019</td>
<td>0.346</td>
<td>0.371</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g101</td>
<td>7</td>
<td>26</td>
<td>92.2</td>
<td>64.8</td>
<td>15.19</td>
<td>578</td>
<td>0.01</td>
<td>13.7</td>
<td>116</td>
<td>23.6</td>
<td>2187</td>
<td>0.322</td>
<td>0.340</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g031</td>
<td>7</td>
<td>26</td>
<td>87.3</td>
<td>62.9</td>
<td>15.50</td>
<td>517</td>
<td>0.00</td>
<td>17.7</td>
<td>124</td>
<td>27.7</td>
<td>1020</td>
<td>0.289</td>
<td>0.304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hly01</td>
<td>7</td>
<td>26</td>
<td>97.3</td>
<td>62.7</td>
<td>15.37</td>
<td>694</td>
<td>0.00</td>
<td>23.2</td>
<td>184</td>
<td>20.3</td>
<td>2004</td>
<td>0.443</td>
<td>0.480</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hly2</td>
<td>7</td>
<td>26</td>
<td>98.0</td>
<td>61.8</td>
<td>15.82</td>
<td>614</td>
<td>0.00</td>
<td>22.0</td>
<td>160</td>
<td>21.7</td>
<td>1270</td>
<td>0.396</td>
<td>0.438</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hne01</td>
<td>7</td>
<td>26</td>
<td>89.9</td>
<td>59.9</td>
<td>13.48</td>
<td>653</td>
<td>0.12</td>
<td>25.4</td>
<td>176</td>
<td>26.0</td>
<td>1938</td>
<td>0.377</td>
<td>0.390</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hot01</td>
<td>7</td>
<td>26</td>
<td>89.8</td>
<td>56.1</td>
<td>16.38</td>
<td>658</td>
<td>0.00</td>
<td>20.5</td>
<td>37</td>
<td>29.5</td>
<td>1879</td>
<td>0.268</td>
<td>0.243</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hrc01</td>
<td>7</td>
<td>26</td>
<td>90.2</td>
<td>63.5</td>
<td>17.56</td>
<td>675</td>
<td>0.17</td>
<td>16.3</td>
<td>106</td>
<td>34.7</td>
<td>1867</td>
<td>0.316</td>
<td>0.313</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hxc01</td>
<td>7</td>
<td>26</td>
<td>84.9</td>
<td>62.9</td>
<td>17.95</td>
<td>579</td>
<td>0.00</td>
<td>17.3</td>
<td>133</td>
<td>41.5</td>
<td>272</td>
<td>0.255</td>
<td>0.240</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hyk02</td>
<td>7</td>
<td>26</td>
<td>81.1</td>
<td>61.0</td>
<td>20.94</td>
<td>376</td>
<td>0.00</td>
<td>20.0</td>
<td>105</td>
<td>46.8</td>
<td>1242</td>
<td>0.200</td>
<td>0.205</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id101</td>
<td>7</td>
<td>26</td>
<td>91.9</td>
<td>63.5</td>
<td>16.72</td>
<td>649</td>
<td>0.00</td>
<td>20.9</td>
<td>185</td>
<td>30.9</td>
<td>1601</td>
<td>0.388</td>
<td>0.419</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Monthly Station Summaries

CoAgMet Homepage

- About CoAgMet
  A brief history of how CoAgMet came to be.
- CoAgMet Crop Water Use (ET) Access
  Page for obtaining crop and turf water use information (ET).
- Evapotranspiration Reports
  ETRs are daily reports for selected stations by region.
- Station Description
  A description of a typical CoAgMet station.
- Station Index
  Metadata on all of the stations on the CoAgMet network.
- Monthly Summaries
  Interactive access to the daily data set for a particular station and selected months.
- Daily Summaries (all stations)
  Daily summary files are formatted to display selected parameters for all stations.
- Hourly Data Access
  Interactive access to the hourly data set for a particular station and selected days.
- Hourly Data Plots
  Plots of temperature, humidity, and wind for all CoAgMet stations.
- Raw Data Access
  Direct access to the raw data. Select hourly or daily data from our archives.
- Map of CoAgMet Stations
  A map showing CoAgMet station locations along with images.
- Crop Management Decision Support
  A link to the Barley Expert System and CropFlex programs.
# Monthly Station Summaries

## KSY01 – Kersey Aug. 2007

## CoAgMet Monthly Summary Results

**Station ID:** KSY01  
**Station Name:** Kersey  
**Latitude:** 40.3768  
**Longitude:** 104.532  
**Elevation:** 4625 ft  
**Location:** 2 mi SE Kersey

**Owner:** Dennis Hoshiko  
**Sponsors:** CSU Ag Experiment Station - Fort Collins

<table>
<thead>
<tr>
<th>Date</th>
<th>Max Temp degF</th>
<th>Min Temp degF</th>
<th>Vapor Press Mb</th>
<th>Solar Rad Lggy</th>
<th>Precip in</th>
<th>Wind run mi</th>
<th>Min Scm soil degF</th>
<th>Min RH %</th>
<th>Grow DyDy degF</th>
<th>Ref ET in</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-01-2007</td>
<td>89.5</td>
<td>62.0</td>
<td>12.28</td>
<td>556</td>
<td>0.34</td>
<td>81</td>
<td>51.6</td>
<td>20.4</td>
<td>2044</td>
<td>0.247</td>
</tr>
<tr>
<td>8-02-2007</td>
<td>82.9</td>
<td>62.6</td>
<td>19.83</td>
<td>564</td>
<td>1.41</td>
<td>103</td>
<td>62.9</td>
<td>48.8</td>
<td>2067</td>
<td>0.239</td>
</tr>
<tr>
<td>8-03-2007</td>
<td>90.1</td>
<td>63.4</td>
<td>20.93</td>
<td>552</td>
<td>0.03</td>
<td>55</td>
<td>64.5</td>
<td>30.9</td>
<td>2091</td>
<td>0.227</td>
</tr>
<tr>
<td>8-04-2007</td>
<td>90.2</td>
<td>65.5</td>
<td>20.11</td>
<td>561</td>
<td>0.00</td>
<td>65</td>
<td>64.9</td>
<td>30.7</td>
<td>2117</td>
<td>0.240</td>
</tr>
<tr>
<td>8-05-2007</td>
<td>90.7</td>
<td>60.0</td>
<td>18.99</td>
<td>557</td>
<td>0.06</td>
<td>68</td>
<td>60.7</td>
<td>25.8</td>
<td>2140</td>
<td>0.247</td>
</tr>
<tr>
<td>8-06-2007</td>
<td>81.0</td>
<td>62.9</td>
<td>20.15</td>
<td>298</td>
<td>0.01</td>
<td>50</td>
<td>62.9</td>
<td>51.0</td>
<td>2162</td>
<td>0.342</td>
</tr>
<tr>
<td>8-07-2007</td>
<td>83.9</td>
<td>59.7</td>
<td>18.39</td>
<td>424</td>
<td>0.00</td>
<td>61</td>
<td>60.1</td>
<td>38.9</td>
<td>2184</td>
<td>0.219</td>
</tr>
<tr>
<td>8-08-2007</td>
<td>89.0</td>
<td>55.6</td>
<td>14.10</td>
<td>629</td>
<td>0.00</td>
<td>55</td>
<td>56.6</td>
<td>21.3</td>
<td>2205</td>
<td>0.255</td>
</tr>
<tr>
<td>8-09-2007</td>
<td>92.0</td>
<td>57.9</td>
<td>14.65</td>
<td>694</td>
<td>0.00</td>
<td>67</td>
<td>57.0</td>
<td>14.0</td>
<td>2227</td>
<td>0.273</td>
</tr>
<tr>
<td>8-10-2007</td>
<td>92.6</td>
<td>57.5</td>
<td>16.54</td>
<td>620</td>
<td>0.00</td>
<td>48</td>
<td>57.4</td>
<td>21.2</td>
<td>2248</td>
<td>0.252</td>
</tr>
<tr>
<td>8-11-2007</td>
<td>92.0</td>
<td>53.6</td>
<td>14.47</td>
<td>626</td>
<td>0.00</td>
<td>66</td>
<td>53.7</td>
<td>13.8</td>
<td>2268</td>
<td>0.277</td>
</tr>
<tr>
<td>8-12-2007</td>
<td>93.3</td>
<td>63.9</td>
<td>18.76</td>
<td>605</td>
<td>0.00</td>
<td>65</td>
<td>61.5</td>
<td>27.6</td>
<td>2293</td>
<td>0.257</td>
</tr>
<tr>
<td>8-13-2007</td>
<td>98.0</td>
<td>60.4</td>
<td>17.03</td>
<td>542</td>
<td>0.00</td>
<td>75</td>
<td>61.4</td>
<td>17.2</td>
<td>2316</td>
<td>0.267</td>
</tr>
<tr>
<td>8-14-2007</td>
<td>95.9</td>
<td>62.2</td>
<td>16.99</td>
<td>521</td>
<td>0.14</td>
<td>90</td>
<td>63.6</td>
<td>22.9</td>
<td>2340</td>
<td>0.271</td>
</tr>
<tr>
<td>8-15-2007</td>
<td>86.8</td>
<td>62.8</td>
<td>18.59</td>
<td>385</td>
<td>0.01</td>
<td>59</td>
<td>63.3</td>
<td>33.3</td>
<td>2365</td>
<td>0.192</td>
</tr>
<tr>
<td>8-16-2007</td>
<td>86.3</td>
<td>57.5</td>
<td>18.29</td>
<td>560</td>
<td>0.00</td>
<td>66</td>
<td>58.6</td>
<td>34.9</td>
<td>2387</td>
<td>0.242</td>
</tr>
<tr>
<td>8-17-2007</td>
<td>88.8</td>
<td>60.4</td>
<td>12.51</td>
<td>505</td>
<td>0.00</td>
<td>74</td>
<td>60.3</td>
<td>33.8</td>
<td>2410</td>
<td>0.228</td>
</tr>
<tr>
<td>8-18-2007</td>
<td>92.4</td>
<td>57.3</td>
<td>17.43</td>
<td>524</td>
<td>0.00</td>
<td>56</td>
<td>58.7</td>
<td>24.1</td>
<td>2431</td>
<td>0.225</td>
</tr>
<tr>
<td>8-19-2007</td>
<td>91.4</td>
<td>57.6</td>
<td>18.04</td>
<td>509</td>
<td>0.01</td>
<td>52</td>
<td>58.4</td>
<td>23.1</td>
<td>2453</td>
<td>0.214</td>
</tr>
<tr>
<td>8-20-2007</td>
<td>95.1</td>
<td>54.9</td>
<td>14.22</td>
<td>596</td>
<td>0.00</td>
<td>45</td>
<td>55.9</td>
<td>13.2</td>
<td>2474</td>
<td>0.250</td>
</tr>
<tr>
<td>8-21-2007</td>
<td>95.8</td>
<td>51.8</td>
<td>13.85</td>
<td>592</td>
<td>0.00</td>
<td>46</td>
<td>53.1</td>
<td>12.3</td>
<td>2493</td>
<td>0.253</td>
</tr>
<tr>
<td>8-22-2007</td>
<td>85.5</td>
<td>57.8</td>
<td>16.74</td>
<td>524</td>
<td>0.00</td>
<td>134</td>
<td>59.2</td>
<td>33.8</td>
<td>2514</td>
<td>0.258</td>
</tr>
<tr>
<td>8-23-2007</td>
<td>73.1</td>
<td>56.6</td>
<td>16.78</td>
<td>211</td>
<td>0.03</td>
<td>99</td>
<td>57.4</td>
<td>55.8</td>
<td>2529</td>
<td>0.134</td>
</tr>
<tr>
<td>8-24-2007</td>
<td>82.6</td>
<td>55.3</td>
<td>14.34</td>
<td>574</td>
<td>0.11</td>
<td>87</td>
<td>56.0</td>
<td>26.6</td>
<td>2548</td>
<td>0.235</td>
</tr>
<tr>
<td>8-25-2007</td>
<td>86.3</td>
<td>52.5</td>
<td>15.59</td>
<td>581</td>
<td>0.00</td>
<td>49</td>
<td>52.8</td>
<td>25.8</td>
<td>2567</td>
<td>0.212</td>
</tr>
<tr>
<td>8-26-2007</td>
<td>98.2</td>
<td>53.0</td>
<td>14.23</td>
<td>551</td>
<td>0.00</td>
<td>54</td>
<td>53.6</td>
<td>9.5</td>
<td>2587</td>
<td>0.230</td>
</tr>
<tr>
<td>8-27-2007</td>
<td>90.3</td>
<td>53.7</td>
<td>15.58</td>
<td>425</td>
<td>0.03</td>
<td>64</td>
<td>55.3</td>
<td>23.5</td>
<td>2607</td>
<td>0.199</td>
</tr>
</tbody>
</table>
Daily Regional Climatic and ET Comparison

CoAgMet Homepage

- **About CoAgMet**
  A brief history of how CoAgMet came to be.

- **CoAgMet Crop Water Use (ET) Access**
  Page for obtaining crop and turf water use information (ET).

- **Evapotranspiration Reports**
  ETRs are daily reports for selected stations by region.

- **Station Description**
  A description of a typical CoAgMet station.

- **Station Index**
  Metadata on all of the stations on the CoAgMet network.

- **Monthly Summaries**
  Interactive access to the daily data set for a particular station and selected months.

- **Daily Summaries (all stations)**
  Daily summary files are formatted to display selected parameters for all stations.

- **Hourly Data Access**
  Interactive access to the hourly data set for a particular station and selected days.

- **Hourly Data Plots**
  Plots of temperature, humidity and wind for all CoAgMet stations.

- **Raw Data Access**
  Direct access to the raw data. Select hourly or daily data from our archives.

- **Map of CoAgMet Stations**
  A map showing CoAgMet station locations along with images.

- **Crop Management Decision Support**
  A link to the Barley Expert System and CropFlex programs.

- **Other Climatic Data**
  The Colorado Climate Center maintains a database of historical climatic data for many locations.
# Daily Regional Climatic and ET Comparison

## CoAgMet Regional ETR Summary Results

CoAgMet/NCWCD Meteorological Data for 5/30/2007

<table>
<thead>
<tr>
<th></th>
<th>FtColl</th>
<th>ARDEC</th>
<th>HortFm</th>
<th>Lovld</th>
<th>Lsgmnt</th>
<th>Peckhm</th>
<th>Eaton</th>
<th>Lucern</th>
<th>Greely</th>
<th>Ftlpnt</th>
<th>Ault</th>
<th>Brigsd</th>
<th>Wellnt</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiTemp</td>
<td>65</td>
<td>63</td>
<td>63</td>
<td>65</td>
<td>65</td>
<td>66</td>
<td>64</td>
<td>65</td>
<td>63</td>
<td>m</td>
<td>63</td>
<td>63</td>
<td>65</td>
</tr>
<tr>
<td>LoTemp</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>41</td>
<td>40</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>m</td>
<td>41</td>
<td>41</td>
<td>38</td>
</tr>
<tr>
<td>Precip</td>
<td>0.14</td>
<td>0.03</td>
<td>0.31</td>
<td>0.06</td>
<td>0.01</td>
<td>0.03</td>
<td>0.53</td>
<td>0.10</td>
<td>0.08</td>
<td>0.00</td>
<td>0.01</td>
<td>0.11</td>
<td>0.02</td>
</tr>
<tr>
<td>P/Month</td>
<td>0.18</td>
<td>0.06</td>
<td>0.34</td>
<td>0.11</td>
<td>0.06</td>
<td>0.07</td>
<td>0.61</td>
<td>0.15</td>
<td>0.13</td>
<td>0.05</td>
<td>0.06</td>
<td>0.19</td>
<td>0.05</td>
</tr>
<tr>
<td>P/Year</td>
<td>0.28</td>
<td>0.16</td>
<td>0.48</td>
<td>0.24</td>
<td>0.24</td>
<td>0.17</td>
<td>0.70</td>
<td>0.23</td>
<td>0.20</td>
<td>0.25</td>
<td>0.12</td>
<td>0.231</td>
<td>0.16</td>
</tr>
<tr>
<td>WindGst</td>
<td>15.7</td>
<td>18.0</td>
<td>19.3</td>
<td>17.0</td>
<td>14.7</td>
<td>17.0</td>
<td>17.5</td>
<td>20.9</td>
<td>19.7</td>
<td>18.5</td>
<td>15.8</td>
<td>18.8</td>
<td>20.7</td>
</tr>
<tr>
<td>Ref Et</td>
<td>0.18</td>
<td>0.10</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.19</td>
<td>0.13</td>
<td>0.16</td>
<td>0.17</td>
<td>0.00</td>
<td>0.18</td>
<td>0.17</td>
<td>0.20</td>
</tr>
<tr>
<td>GrowDD</td>
<td>3560</td>
<td>3559</td>
<td>3482</td>
<td>3769</td>
<td>3688</td>
<td>3623</td>
<td>3579</td>
<td>3639</td>
<td>3635</td>
<td>m</td>
<td>3647</td>
<td>2602</td>
<td>3550</td>
</tr>
<tr>
<td>Scm Scil</td>
<td>50.5</td>
<td>48.8</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>60.1</td>
<td>m</td>
<td>55.6</td>
<td>53.0</td>
<td>57.6</td>
<td>55.6</td>
<td>50.5</td>
<td>56.0</td>
</tr>
</tbody>
</table>

Crop Evapotranspiration

- Alfalfa: 0.06, 0.06, 0.05, 0.05, 0.05, 0.05, 0.05, 0.06, 0.06, 0.06, 0.06, 0.06, 0.06, 0.06, 0.06, 0.07, 0.06, 0.07
- Corn: 0.04, 0.04, 0.03, 0.03, 0.03, 0.03, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04
- Drybeans: m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m
- Smallgrn: 0.04, 0.04, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03
- Sgrbeets: 0.04, 0.04, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03, 0.03
- Potatoes: m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m, m
- Onion/sd: 0.07, 0.07, 0.06, 0.06, 0.06, 0.07, 0.05, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.08, 0.08
- WntrWheat: 0.04, 0.04, 0.03, 0.03, 0.03, 0.04, 0.04, 0.04, 0.04, 0.03, 0.04, 0.03, 0.03, 0.04, 0.03, 0.03, 0.04

---

**North Central Region, May 30, 2007**
Crop Specific ET Reports

CoAgMet Homepage

- About CoAgMet
  A brief history of how CoAgMet came to be.

- CoAgMet Crop Water Use (ET) Access
  Page for obtaining crop and turf water use information (ET).

- Evapotranspiration Reports
  ETRs are daily reports for selected stations by region.

- Station Description
  A description of a typical CoAgMet station.

- Station Index
  Metadata on all of the stations on the CoAgMet network.

- Monthly Summaries
  Interactive access to the daily data set for a particular station and selected months.

- Daily Summaries (all stations)
  Daily summary files are formatted to display selected parameters for all stations.

- Hourly Data Access
  Interactive access to the hourly data set for a particular station and selected days.

- Hourly Data Plots
  Plots of temperature, humidity and wind for all CoAgMet stations.

- Raw Data Access
  Direct access to the raw data. Select hourly or daily data from our archives.

- Map of CoAgMet Stations
  A map showing CoAgMet station locations along with images.

- Crop Management Decision Support
  A link to the Barley Expert System and CropFlex programs.
Instructions for using this page are available [here](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl).
Information about ET data is available [here](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl).
CoAgMet Station Map [here](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl).

Select a Date:
Use as ○ end date  ○ start date.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Day</th>
<th># to do</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>January</td>
<td>19</td>
<td>01</td>
<td>br102 - Burlington South (#2)</td>
</tr>
<tr>
<td>2006</td>
<td>September</td>
<td>27</td>
<td>09</td>
<td>eac01 - Eastern Adams County (landfill)</td>
</tr>
<tr>
<td>2003</td>
<td>March</td>
<td>23</td>
<td>05</td>
<td>cir01 - Center</td>
</tr>
<tr>
<td>2002</td>
<td>April</td>
<td>22</td>
<td>04</td>
<td>cir02 - Center #2</td>
</tr>
<tr>
<td>2001</td>
<td>May</td>
<td>25</td>
<td>06</td>
<td>cl201 - Cortez</td>
</tr>
<tr>
<td>2000</td>
<td>June</td>
<td>24</td>
<td>07</td>
<td>dit01 - Date</td>
</tr>
<tr>
<td>1999</td>
<td>July</td>
<td>20</td>
<td>06</td>
<td>dvc01 - Dove Creek</td>
</tr>
<tr>
<td>1998</td>
<td>August</td>
<td>26</td>
<td>06</td>
<td>eac01 - Eastern Adams County (landfill)</td>
</tr>
</tbody>
</table>

Select Days
Hold down the control key to select more than one station

Select Stations:
- [br102](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [br103](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [cag01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [cir01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [cir02](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [cl201](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [dit01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [dvc01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [eac01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [fcr02](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [ft01](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [ft03](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)

Irrigation Status Key:
- [Fully Irrigated](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [Partially Irrigated](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [Dryland](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)
- [Unknown](http://ccc.atmos.colostate.edu/cgi-bin/extended_et_form.pl)

Select Crops and Planting Date:
Check □ All □ None

☑ Alfalfa (Green Up Date) m 04 d 24
Crop Specific ET Reports

CoAgMet Extended Crop Evapotranspiration

<table>
<thead>
<tr>
<th>Date</th>
<th>Alfalfa</th>
<th>Corn</th>
<th>Drybeans</th>
<th>Smallgrn</th>
<th>Sgrbeets</th>
<th>Potatoes</th>
<th>Onion/sd</th>
<th>WntrWheat</th>
<th>Turf</th>
<th>RefET</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/14/2007</td>
<td>0.42</td>
<td>0.08</td>
<td>0.09</td>
<td>0.08</td>
<td>0.08</td>
<td>0.08</td>
<td>0.17</td>
<td>0.08</td>
<td>0.34</td>
<td>0.42</td>
</tr>
<tr>
<td>07/15/2007</td>
<td>0.45</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.18</td>
<td>0.09</td>
<td>0.36</td>
<td>0.45</td>
</tr>
<tr>
<td>07/16/2007</td>
<td>0.37</td>
<td>0.07</td>
<td>0.08</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.15</td>
<td>0.07</td>
<td>0.30</td>
<td>0.37</td>
</tr>
<tr>
<td>07/17/2007</td>
<td>0.46</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.19</td>
<td>0.09</td>
<td>0.37</td>
<td>0.46</td>
</tr>
<tr>
<td>07/18/2007</td>
<td>0.40</td>
<td>0.08</td>
<td>0.08</td>
<td>0.08</td>
<td>0.08</td>
<td>0.08</td>
<td>0.16</td>
<td>0.08</td>
<td>0.32</td>
<td>0.40</td>
</tr>
<tr>
<td>07/19/2007</td>
<td>0.25</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.10</td>
<td>0.05</td>
<td>0.20</td>
<td>0.25</td>
</tr>
<tr>
<td>07/20/2007</td>
<td>0.27</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.11</td>
<td>0.05</td>
<td>0.22</td>
<td>0.27</td>
</tr>
<tr>
<td>Sum</td>
<td>2.62</td>
<td>0.52</td>
<td>0.53</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
<td>1.05</td>
<td>0.52</td>
<td>2.10</td>
<td>2.62</td>
</tr>
<tr>
<td>Average</td>
<td>0.37</td>
<td>0.07</td>
<td>0.08</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.15</td>
<td>0.07</td>
<td>0.30</td>
<td>0.37</td>
</tr>
</tbody>
</table>

- Calculates multi-day ET for: alfalfa, corn, dry beans, small grain, sugar beets, potatoes, onion, winter wheat, turf grass, and reference ET, via Penman-Monteith or Kimberly-Penman
Downloading CoAgMet Raw Data

CoAgMet Homepage

- **About CoAgMet**
  A brief history of how CoAgMet came to be.

- **CoAgMet Crop Water Use (ET) Access**
  Page for obtaining crop and turf water use information (ET).

- **Evapotranspiration Reports**
  ETRs are daily reports for selected stations by region.

- **Station Description**
  A description of a typical CoAgMet station.

- **Station Index**
  Metadata on all of the stations on the CoAgMet network.

- **Monthly Summaries**
  Interactive access to the daily data set for a particular station and selected months.

- **Daily Summaries (all stations)**
  Daily summary files are formatted to display selected parameters for all stations.

- **Hourly Data Access**
  Interactive access to the hourly data set for a particular station and selected days.

- **Hourly Data Plots**
  Plots of temperature, humidity and wind for all CoAgMet stations.

- **Raw Data Access**
  Direct access to the raw data. Select hourly or daily data from our archives.

- **Map of CoAgMet Stations**
  A map showing CoAgMet station locations along with images.

- **Crop Management Decision Support**
  A link to the Barley Expert System and CropFlex programs.

Click Here
The Colorado Water Institute funded a study completed in 2009 looking at trends in evapotranspiration in Colorado. CoAgMet data, although imperfect, were very helpful in analyzing regional and interannual variations and short-term trends in ET.
Example of Growing Season
Cycle of Evapotranspiration

Ault Daily Reference ET (2007)
Our Current Challenges

- Keeping CoAgMet going with limited resources
- Improving data quality and completeness
- Putting this great resource to beneficial use and making people aware of it
Current Action Items

► Downsize network – close unused, poorly maintained, unsupported or redundant stations

► Find sponsors for priority stations – minimum $2,000/year/stations – stop maintaining unsupported stations.

► For supported stations -- improve data quality, access and products – update to “real time” reporting when feasible

► Make sure data support the computation of “Consumptive Use” and meet the needs of users.
CoAgMet now and in the future

► We welcome your comments and suggestions

► We appreciate your support

► We may need your help again
CoAgMet -- the Colorado Agricultural Meteorological Network
http://ccc.atmos.colostate.edu/~coagmet/