KCCI SchoolNet8
and the Iowa Mesonet

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Iowa Environmental Mesonet 411

• What does ‘mesonet’ mean?
  – ‘meso’ - Spatial scale, ‘net’ - network

• Why ‘environmental’?
  – We are interested in air quality, water quality
    and other non-weather datasets

• Where is ‘Iowa’?
  – It is the current state you are in other than
    confusion.
More on the IEM

- Project of the Department of Agronomy at Iowa State University
- We are data pigs.
- Look to meet the growing data needs of users in the State and elsewhere.
- KCCI SchoolNet has provided us a valuable network to meet various needs.
Data Flow
Data Formatting

C 074  Min  02/17/03 ENE 00MPH 000K 460F 007F 084% 30.08" 00.00"D 00.07"M 00.00"R

D 074  Max  02/17/03 ENE 10MPH 050K 460F 021F 100% 30.20" 00.00"D 00.07"M 00.00"R

E 074  12:01 02/17/03 ENE 03MPH 046K 460F 020F 099% 30.09F 00.00"D 00.07"M 00.00"R

Your site produces roughly 6 obs per minute!
Converted Data Formats

**METAR**

SAUS43 KDMX 171536

**Comma Delimited**

SAEI4, 2003/02/17 15:35:00, -11.7, 13.3, 2, 180, 0.0, 0.0, 30.09
SchoolNet8 Data Users
SchoolNet8 Data Users

- Storm Prediction Center [SPC]
  - Norman, Oklahoma
  - In charge of providing *timely* forecasts and watches of extreme weather.
  - Use schoolNet8 data to identify *mesoscale* boundaries critical in severe weather forecasting
SchoolNet8 Data Users

• River Forecast Center [RFC]
  – Chanhassen, MN
  – In charge of analyzing and forecasting river flood conditions. Hydrological data.
  – Use SchoolNet8 precipitation totals for their water analysis.
  – The SchoolNet8 network has doubled the hydrological observing sensors in Central Iowa.
SchoolNet8 Data Users

- Forecast Systems Laboratory [FSL]
  - Boulder, Colorado
  - Data collected under the MADIS project.
  - Data is used in very detailed and heavily quality controlled surface analysis programs.
  - This data is then included in some NCEP models.
SchoolNet8 Data Users

- National Weather Service [NWS]
  - Des Moines, IA
  - Receiving data in three different formats
  - Use data in hydrological applications, surface analysis, severe weather awareness, winter weather awareness.
  - Are automatically alerted of 50+ MPH wind gusts and heavy rainfall.
NWS Auto Alerts

• Previously, KCCI would have to manually relay observations to the weather service.

• Now, the IEM automatically generates warnings that appear on forecaster workstations.
NWS AWIPS alerts

KCCI SNET OB: [06:54] 96 MPH GUST SGLI4 Glidden Ralston _ Glidden
LATEST OB: [06:54] 65/64 70MPH from NNW  P: 01.25" RR: 00.00"
WWW Resources
Which website is which?

Iowa Environmental Mesonet
Iowa State University Department of Agronomy

School Network
As the name implies, these automated weather stations are located at schools throughout the state. Currently, KCCI-TV (Des Moines, IA) and KELO-TV (Sioux Falls, SD) have graciously provided the IEM with the ability to process data from their observing networks. We are pursuing other TV stations, for their networks as well.

Select Network: SchoolNet8

Current Data
- Current Conditions (sortable)
- Where’s it raining?
- GIS READY
- GIS Shapelie

Station Plots
- 20 Min Mesonet [SchoolNet]
- Rapid Update every Minute
- Zoomed in on Des Moines
- Solar Radiation
- Barometer: millibar or inches
- Visible Satellite Overlay
- Des Moines NEXRAD Overlay [Loop]

Historical Data
- Download from the archive!

Daily Precipitation Totals
Today Yesterday Feb 15 Feb 14 Feb 13 Feb 12 Feb 11 Feb 10
This Month
Previous Months:

QC Info
- Stations Offline [Graphical View]

Plotting Time Series

http://mesonet.agron.iastate.edu/schoolnet8/
IEM Tracker
IEM Tracker

- System to record metadata about sites
- Most of you have probably gotten the emails from “Iowa Environ Mesonet”
- Since the system came online on 25 June 2002, it has generated over 3700 tickets
- Most of these tickets are generated from the automated data tracking system
What are offline alerts?

- When ‘online’, your site is streaming observations to the Internet at roughly 6 obs per minute.
- A process on the IEM server monitors this feed and once the most recent ob is 30 minutes old, a trouble ticket is generated and site contacts are emailed.
Understanding the Ticket.

----------------------------------------
| *** IEM TRACKER REPORT ***  |
----------------------------------------

ID : SCOI4
Station Name : COLO ELEM _ COLO
Status Change : [OFFLINE] Site is NOT reporting to the IEM
Trouble Ticket# : 3704

Last Observation : 2003-02-17 23:53:00.00
More about the tickets

- Probably 50% of the tickets are network related and out of your hands.
- 5% of the tickets are responded to with further information.
- IEM tracker has improved network performance for each of the networks it monitors.
Trouble Ticket Stats

- **Fewest Tickets**
  - 5 Jefferson Scranton
  - 6 Ankeny Christian
  - 6 Leon

- **Highest Online %**
  - 94 Perry
  - 92 Jefferson Scranton
  - 92 Clarke Osceola

- **Most Tickets**
  - 44 Mount Ayr
  - 41 Colo
  - 36 Panora

- **Lowest Online %**
  - 54 Pella
  - 61 Brooklyn
  - 70 Clarion
Keep those clocks set!

- Data on the IEM website is given a timestamp of the current IEM system clock and **NOT** the timestamp on the observation.
- The precipitation counters are adversely impacted by drifting clocks.
- It makes it a bit more difficult to calculate daily precipitation totals.
Download Data Archive
Data Archives

- 1 minute data archive exists since 14 Feb 2002, this is available on-line
- Since 10 Jul 2002, every observation is archived, but not readily available
- Quickly accessible summary data is coming soon.
Hourly temperatures

![Graph showing hourly temperatures from 8/10/02 1:00 to 8/10/02 23:00. The graph is labeled as Series 1.]}
20 minute temperatures
10 minute temperatures

![Graph showing temperature changes over time. The x-axis represents dates and times from 8/10/02 0:00 to 8/10/02 23:20, with temperature values ranging from 60 to 90 degrees. The line graph indicates a general increase in temperature throughout the day.]
1 minute temperatures
1 minute data!

Temperature  Dew Point  Solar Radiation

Iowa Environmental Mesonet  http://mesonet.agron.iastate.edu
Questions?

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