Iowa Environmental Mesonet: Supporting the real-time and research needs of the national severe weather community

Daryl Herzmann
## What are you interested in?

<table>
<thead>
<tr>
<th></th>
<th>Real-time</th>
<th>Archived</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 2 NEXRAD</strong></td>
<td>134 sites ONDAS compliant</td>
<td>NCDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 day TAMU</td>
</tr>
<tr>
<td><strong>NWS Warnings</strong></td>
<td>Maps &amp; full text GIS Shapefiles</td>
<td>Same apps have archive function</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 1 Jun 2003</td>
</tr>
<tr>
<td><strong>Local Storm Reports (LSR)</strong></td>
<td>Maps GIS Shapefiles</td>
<td>Same apps have archive function</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 1 Jan 2003</td>
</tr>
<tr>
<td><strong>Bufkit Soundings</strong></td>
<td>NWS websites</td>
<td>Iowa+ &gt; 1 Jan 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NAM, GFS, RUC</td>
</tr>
<tr>
<td><strong>Model data</strong></td>
<td>Lots of places</td>
<td></td>
</tr>
<tr>
<td><strong>Surface data</strong></td>
<td>Yeah, IEM ☺</td>
<td></td>
</tr>
<tr>
<td><strong>Satellite</strong></td>
<td>GIS rasters</td>
<td></td>
</tr>
<tr>
<td><strong>Sounding data</strong></td>
<td>Lots of places</td>
<td></td>
</tr>
<tr>
<td><strong>BOATLOADS</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>IEM</strong></td>
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<td></td>
</tr>
</tbody>
</table>

24 March 2007 2007 Central Iowa NWA Severe Storms Conference
All done, have a nice day!

Oh, I have more time?
GIS NEXRAD layers
The NEXRAD layer used in these images are available in a georeferenced RASTER format. You will need this [this world file](http://mesonet.agron.iastate.edu/archive/data/2007/03/01/GIS/uscom/n0r_200703011800.png) to correctly georeference them. The projection of these images is geographic NAD83 (unprojected). You will need to rename the world file to match the filename of the RADAR layer before loading into your GIS.
24 March 2007  2007 Central Iowa NWA
Severe Storms Conference
### Summary:

<table>
<thead>
<tr>
<th>Warning</th>
<th>Listed Warnings</th>
<th>Verified: $A_w$</th>
<th>% Verified</th>
<th>Reports</th>
<th>Warned Events ($A_w$)</th>
<th>Unwarned Events ($B$)</th>
<th>Non TOR LSRs during TOR warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>36</td>
<td>13</td>
<td>36</td>
<td>51</td>
<td>45</td>
<td>5</td>
<td>17</td>
</tr>
</tbody>
</table>

$$\text{FAR} = \frac{C}{A_w} = 0.64 \quad \text{POD} = \frac{A_e}{A_e + B} = 0.9 \quad \text{CSI} = \left(\frac{\text{POD}}{1} + \frac{1 - \text{FAR}}{1}\right)^{-1} = 0.35$$

### Avg Lead Time for 1st Event: 11.7

### Avg Lead Time for all Events: 15.8

### Max Lead Time: 38

### Min Lead Time: 1

### Warnings Issued & Verifying LSRs:

<table>
<thead>
<tr>
<th>Issr</th>
<th>Issued:</th>
<th>Expired:</th>
<th>Lead Time:</th>
<th>County:</th>
<th>City:</th>
<th>Status:</th>
<th>Type</th>
<th>Poly Area:</th>
<th>Magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV</td>
<td>05/05/2006 00:09</td>
<td>05/05/2006 00:45</td>
<td>Concho, TX McCulloch, TX</td>
<td>Mcculloch, TX</td>
<td>Melvin</td>
<td>NEW</td>
<td>Hall</td>
<td>2098 km²</td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:17</td>
<td>05/05/2006 00:45</td>
<td>Concho, TX 1 Nw Boole</td>
<td>Concho, TX</td>
<td>1 Nw Boole</td>
<td>Hall</td>
<td>1.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SV</td>
<td>05/05/2006 00:14</td>
<td>05/05/2006 00:45</td>
<td>McCoLloch, TX Mason, TX San Saba, TX</td>
<td>McCoLloch, TX</td>
<td>Nw Boole</td>
<td>NEW</td>
<td>Hall</td>
<td>3157 km²</td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:26</td>
<td>05/05/2006 00:45</td>
<td>Mcculloch, TX VoGa</td>
<td>Mcculloch, TX</td>
<td>VoGa</td>
<td>Hall</td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:32</td>
<td>05/05/2006 00:45</td>
<td>Mason, TX 2 Eae Mason</td>
<td>Mason, TX</td>
<td>2 Eae Mason</td>
<td>Wind Gust</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:35</td>
<td>05/05/2006 00:45</td>
<td>Mason, TX 8 N Mason</td>
<td>Mason, TX</td>
<td>8 N Mason</td>
<td>Hall</td>
<td>1.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SV</td>
<td>05/05/2006 00:29</td>
<td>05/05/2006 01:15</td>
<td>Tom Green, TX Sterling, TX</td>
<td>Tom Green, TX</td>
<td>Sterling, TX</td>
<td>NEW</td>
<td>Hall</td>
<td>1413 km²</td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:35</td>
<td>05/05/2006 01:15</td>
<td>Sterling, TX 10 S Sterling City</td>
<td>Sterling, TX</td>
<td>10 S Sterling City</td>
<td>Hall</td>
<td>2.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lr</td>
<td>05/05/2006 00:55</td>
<td>05/05/2006 01:15</td>
<td>Tom Green, TX 17 Wrv Arden</td>
<td>Tom Green, TX</td>
<td>17 Wrv Arden</td>
<td>Hall</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SV</td>
<td>05/05/2006 00:31</td>
<td>05/05/2006 01:00</td>
<td>Concho, TX Coleman, TX McCulloch, TX Brown, TX</td>
<td>Concho, TX</td>
<td>Coleman, TX</td>
<td>NEW</td>
<td>Hall</td>
<td>1155 km²</td>
<td></td>
</tr>
<tr>
<td>lo</td>
<td>05/05/2006 00:42</td>
<td>05/05/2006 01:15</td>
<td>Mason, TX</td>
<td>Mason, TX</td>
<td></td>
<td>NEW</td>
<td>Hall</td>
<td>794 km²</td>
<td></td>
</tr>
</tbody>
</table>
1 Jan - 28 Nov 2006 Average SVR polygon size by CWA

Mean Area [km^2]
- 538 - 845
- 846 - 817
- 818 - 919
- 920 - 1070
- 1071 - 1184
- 1185 - 1307
- 1308 - 1440
- 1441 - 1646
- 1647 - 2010
- 2011 - 2811
- 2812 - 4280

IEM

24 March 2007

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Of course, IEM Chat

• A system to support the real-time collaboration of operational meteorologists and emergency management
• Standards based, open source software to do instant messaging
• Project launched June 2005
• 850+ accounts, ~200 TV stations, and 41 WFOs are currently using it
Chatroom interaction (11/12/05)

[22:52:19] iowamesonet 2 mile south of luther, farm house heavily damaged
[22:52:44] nwsdmx6 ham radio reports luther tornado has begun to rope out
[22:55:34] iowamesonet ISU spotters say former Luther tornado has dissipated
[22:56:06] nwsdmx6 tor wrng for story co coming
[22:59:09] iowamesonet funnel on Ames cam
[22:59:52] iowamesonet almost down
[23:00:34] iembot Webster City [Hamilton Co, IA] public reports HAIL of 0.75 INCH at 04:50 PM CST --
[23:02:00] wmt_am got a citizens report of a tornado that touched down briefly just north of lincoln way in ames
IEM Chat Chatroom Messages (non-iembot)
1 Jun 2005 thru 17 Mar 2007
Chatroom Monitor

Select Chatroom to monitor: BotsTalk!

Chatroom Tabs: click roomname to view log for room

3/17 20:16:15 <iembot> FWD issues Flood Advisory (FLS) for Leon, Robertson [TX] till 8:16 AM CDT
3/17 19:00:14 <iembot> ----- Mar 18, 2007 [GMT] ------
3/17 19:38:59 <iembot> FWD issues Flood Advisory (FLS) for Leon, Robertson [TX] till 8:38 PM CDT
3/16 21:31:52 <nwsfwd1> Meant to say area NE of DFW (ie...Paris,...Greenville,...and Sulphur Springs).
3/16 21:31:25 <nwsfwd1> Some smoke from fires in OK/W AR dropping visibility down to between 3 and 6 miles..but should continue to improve during the overnight. FDM-NWS
3/16 20:30:12 <iembot> FWD issues Flood Advisory (FLS) for Leon, Robertson [TX] till 8:29 AM CDT
3/16 19:00:13 <iembot> ----- Mar 17, 2007 [GMT] ------
3/16 19:33:46 <iembot> FWD issues Flood Advisory (FLS) for Leon, Robertson [TX] till 9:33 PM CDT
3/15 19:00:10 <iembot> ----- Mar 16, 2007 [GMT] ------
3/15 9:37:09 <iembot> FWD issues Flood Advisory (FLS) for Leon, Robertson [TX] till 9:36 PM CDT
3/14 20:04:07 <iembot> FWD issues Flood Advisory (FLS) for Robertson [TX] till 8:13 PM CDT
3/14 19:41:46 <iembot> FWD issues Flood Advisory (FLS) for Henderson, Van Zandt [TX] till 7:51 PM CDT
3/14 19:00:43 <nwsfwd1> Thanks, KDFW
3/14 19:00:09 <iembot> ----- Mar 15, 2007 [GMT] ------
3/14 18:55:59 <kiffe> etc We had a report of a viewer that received pea to marble size hail in Gun Barrel City...
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About Historical Logs

- IEMbot messages are shown at the time the product was issued by the NWS
- All links to IEM / SPC products should work
- Historical logs are “live”, can download up to the minute
I'm done! Any questions?

- Daryl Herzmann
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  akrherz@iastate.edu

http://mesonet.agron.iastate.edu
https://iemchat.com