“Snowtober” Overview
October 29, 2011

Joe DelliCarpini
Science and Operations Officer
NOAA/NWS Taunton, MA
Observed Snowfall
October 29, 2011

Maximum of 24-31 inches
Forecast Issues at NWS Taunton

• *Maximizing lead time to our partners*
  – EMs, utilities, airlines, etc.

• *Consistency in snowfall forecasts*
  – Assessment of surface temperatures (melting)
  – Precipitation type near the coast (rain vs. snow)
Maximizing Lead Time

- **CIPS Winter Weather Analogs**
  - Can help couch expectations (36-72h)

- **Ensembles**
  - Provide a window of possible solutions
  - Useful to convey uncertainty
  - Tend to “water down” extreme events!

- **Deterministic Models**
  - ECMWF “locked in” Wed Oct 26 (hints as early as Mon)
  - GFS/NAM came on board Thu Oct 27
  - Near Term: Higher resolution models (mesoscale banding)
Monday October 24, 2011 4:35 PM

This is a very early heads up of the possibility of one or two significant winter weather and coastal impact events. One event may be centered about Thursday night, and another event may be centered about Saturday night. Confidence of such an anomalous event this far out is low for the Thursday night event and even lower for the Saturday night event. Nonetheless, due to the potential impact, we wanted to give you a very early heads up. If our confidence grows for the Thursday night, we may consider a Tuesday afternoon conference call.

There are three primary concerns with both potential events. One is the potential, albeit low at this time, of plowable snow across portions of northern Massachusetts and southwest New Hampshire with one or both systems. The second and even greater concern is the impact that several or more inches could have on trees (most still with considerable foliage) and power lines with again northern Massachusetts and southwest New Hampshire possibly at greatest risk. Third, we have high astronomical tides later this week through the weekend. We see a rather high probability of one or two episodes of minor coastal flooding and a low (but not negligible) probability of moderate or greater coastal flooding.

For now, we suggest that you simply stay aware of later weather forecasts and the NWS Hazardous Weather Outlooks. This is climatologically a very anomalous event, which by its very nature reduces our confidence level. If the threat appears to increase sufficiently over the next 24 hours, we will consider a conference call Tuesday afternoon.
CIPS Analogs: 72h

Best Match: January 19, 1986

www.eas.slu.edu/CIPS/ANALOG/COLD/analog.php
CIPS Analogs: 36h

Best Match: January 18, 1980

www.eas.slu.edu/CIPS/ANALOG/COLD/analog.php
SREF 850 MB Wind Anomalies

Grumm and LaCorte, 2011
SREF Snowfall Probabilities

09Z Friday, October 28th
GFS Sea Level Pressure and Anomaly

Grumm and LaCorte, 2011
HPC/Model Low Track Verification
Forecasts Valid for October 29 - October 30, 2011

RMS Error (nm)

F12-F72

ECMWF

Dave Novak, HPC
HPC/Model Low Track Verification
Forecasts Valid from Oct 29, 2011 00z to Oct 30, 2011 12z

RMS Error (nm)

Forecast Hour

Dave Novak, HPC
### Issue with Model Guidance

Wet bulb cooling affects precipitation type!

<table>
<thead>
<tr>
<th></th>
<th>OCT 28</th>
<th>OCT 29</th>
<th>OCT 30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DI</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HR</strong></td>
<td>06</td>
<td>09</td>
<td>12</td>
</tr>
<tr>
<td><strong>X/N</strong></td>
<td>50</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
<td><strong>TMP</strong></td>
<td>34</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td><strong>DPT</strong></td>
<td>30</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td><strong>CLD</strong></td>
<td>BK</td>
<td>CL</td>
<td>CL</td>
</tr>
<tr>
<td><strong>WDR</strong></td>
<td>34</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td><strong>WSP</strong></td>
<td>07</td>
<td>05</td>
<td>05</td>
</tr>
<tr>
<td><strong>P06</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>P12</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Q06</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Q12</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>T06</strong></td>
<td>0/1</td>
<td>0/13</td>
<td>0/7</td>
</tr>
<tr>
<td><strong>T12</strong></td>
<td>0/13</td>
<td>0/11</td>
<td>0/7</td>
</tr>
<tr>
<td><strong>PO2</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>POS</strong></td>
<td>68</td>
<td>72</td>
<td>67</td>
</tr>
<tr>
<td><strong>SNW</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>CIG</strong></td>
<td>7</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>VIS</strong></td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>OBV</strong></td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

GFS MOS for Bradley Intl Airport, CT
00Z October 28
Consistent Snowfall Forecasts
Mesoscale Banding:
Where Does It Set Up?
Timing of onset was reasonable at BDL.

Forecast changeover was too slow - conditions lowered to LIFR much sooner than forecast.
Aviation Forecasts

Timing of onset was reasonable at BOS.

Forecast changeover was also too slow - conditions lowered to LIFR much sooner than forecast.
“Snowtober” Overview
October 29, 2011

Questions?