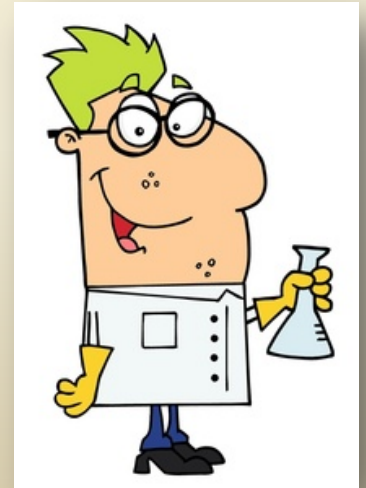




Lessons Learned in the Nursery Coop Lab in 2013

Tom Starkey
November 2013



Southern Forest Nursery Management Cooperative

Research Toward Increasing Nursery Productivity

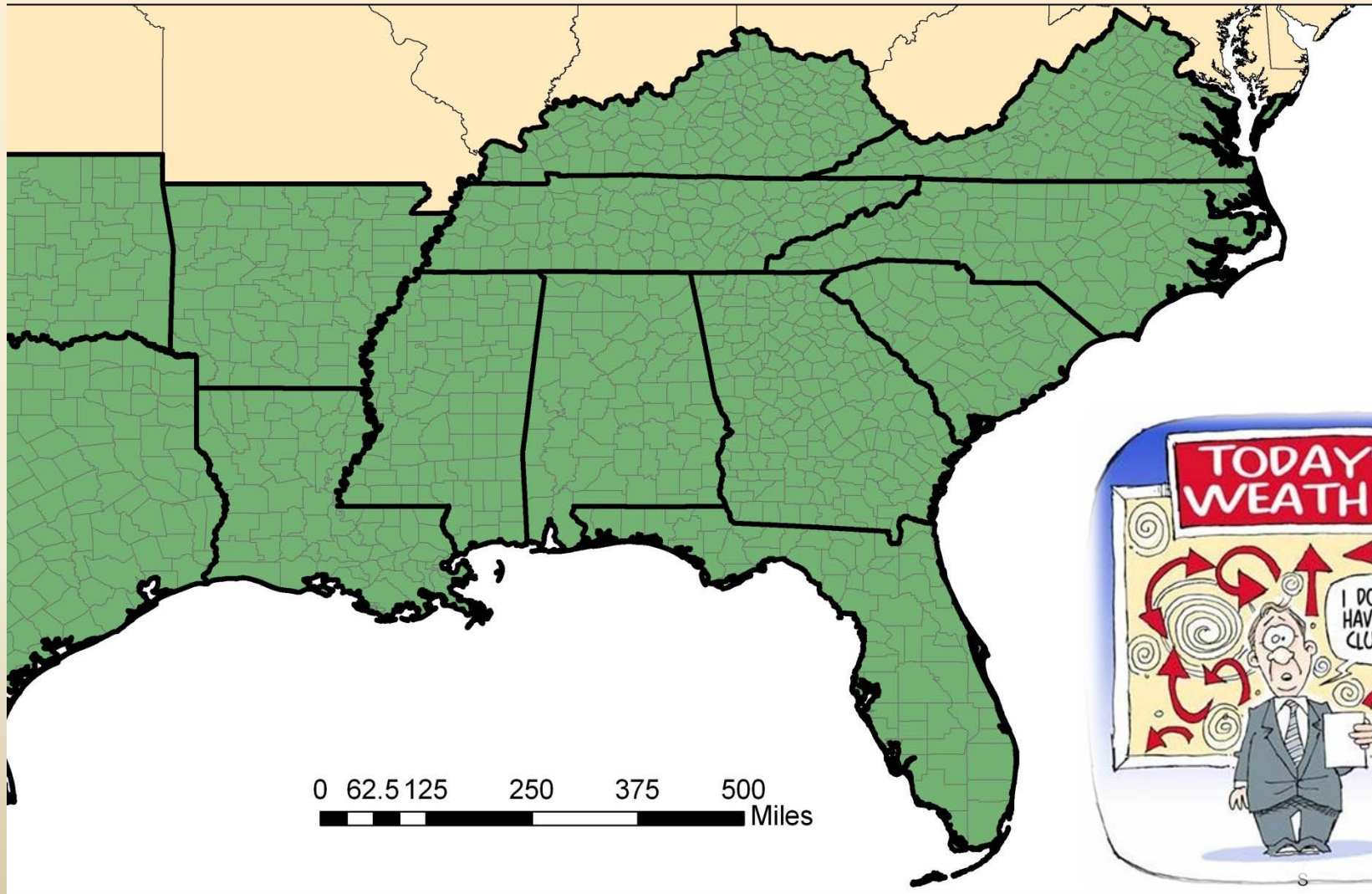


Things rarely seen

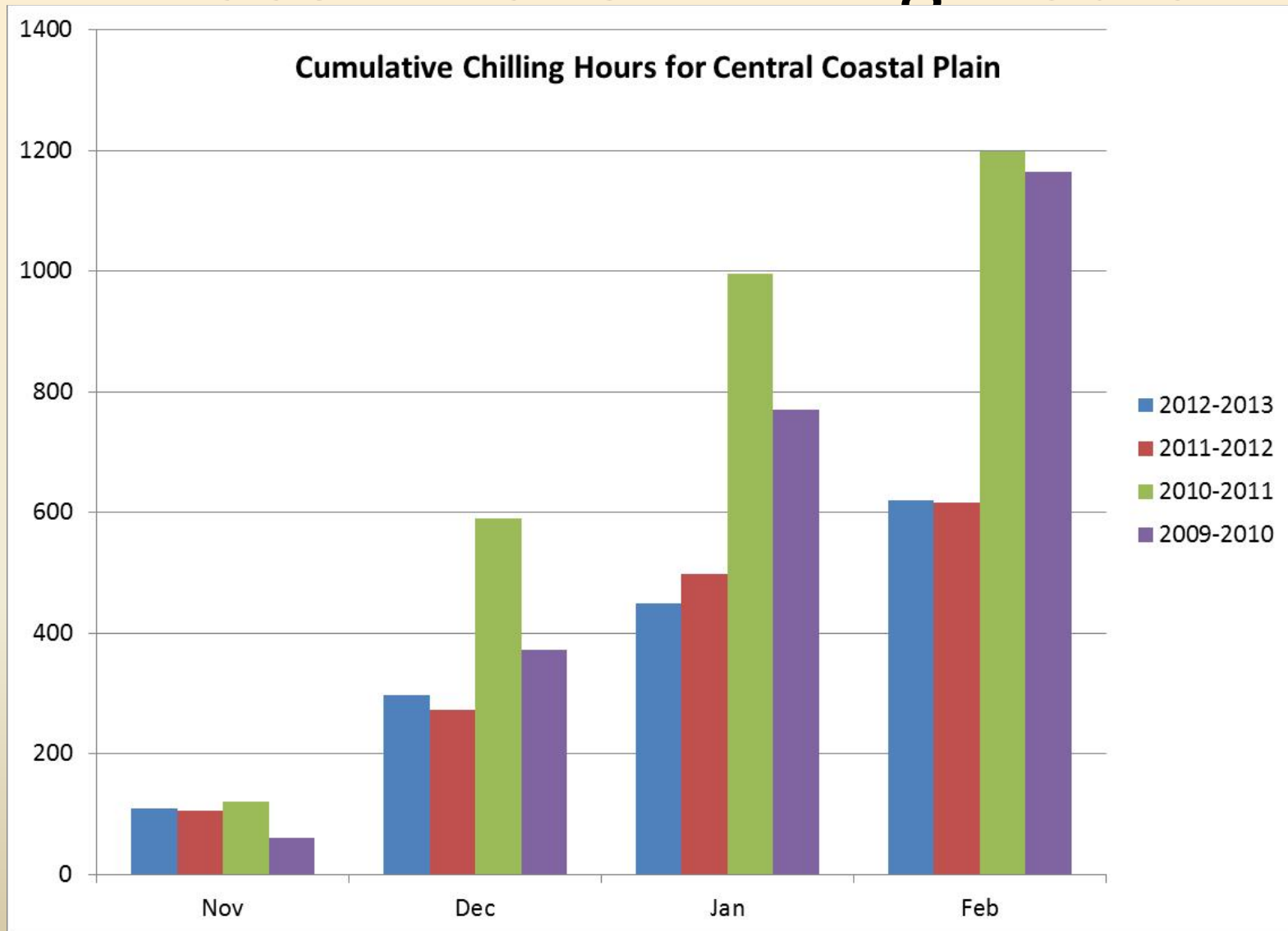
- Seedlings out growing freeze injury
- Lenticels so thick on a stem it was difficult to see the bark
- Lenticels 8" above the root collar
- Outplanted seedlings dying in September
- Purple slash pine - in April
- Lake Hartwell above full pool



Weather Extremes for 2013



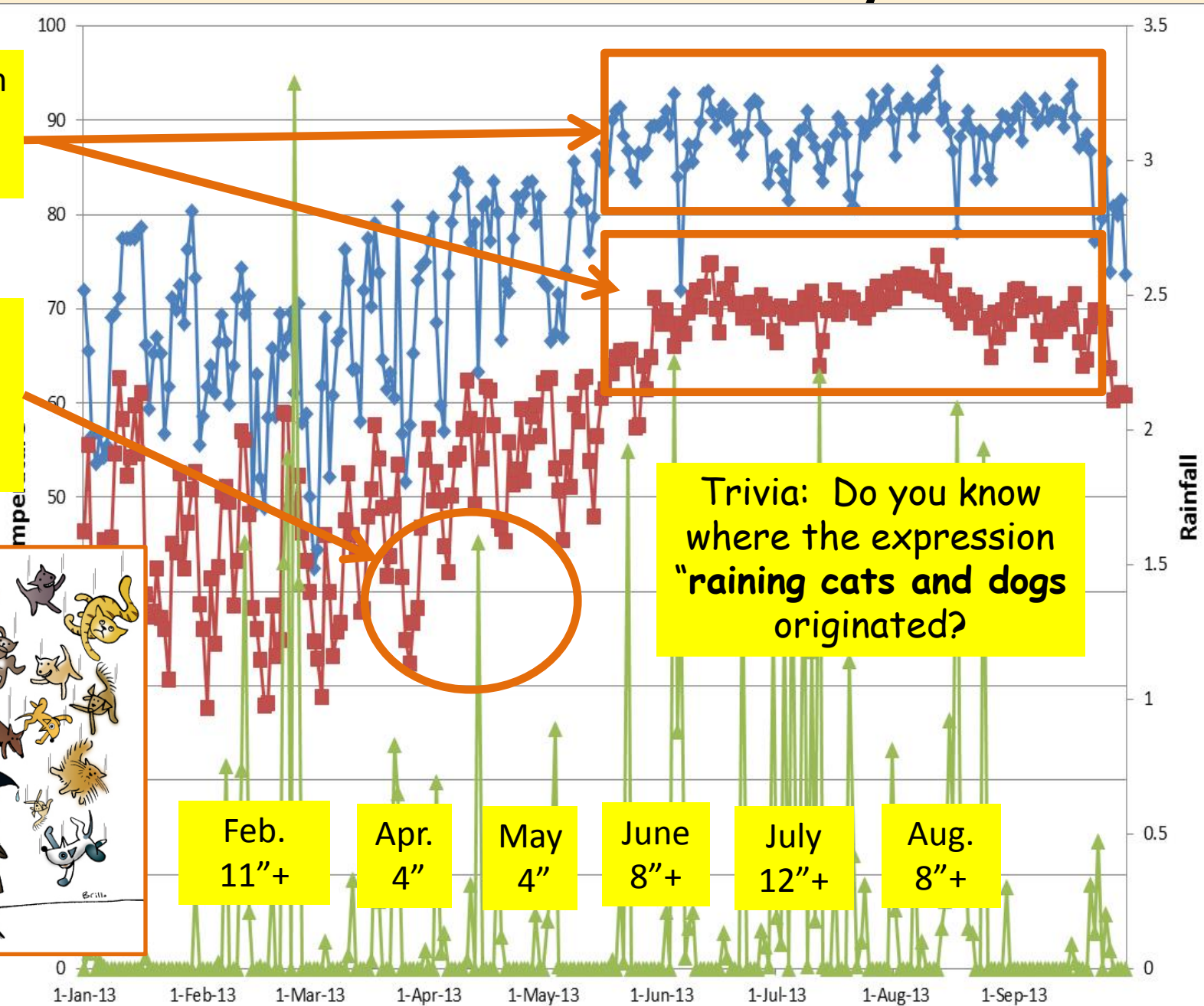
2009 – 2013 Chilling Hours



Summary of 2012

Growing season temperatures were moderate

April to May - some locations coldest in 45+ years



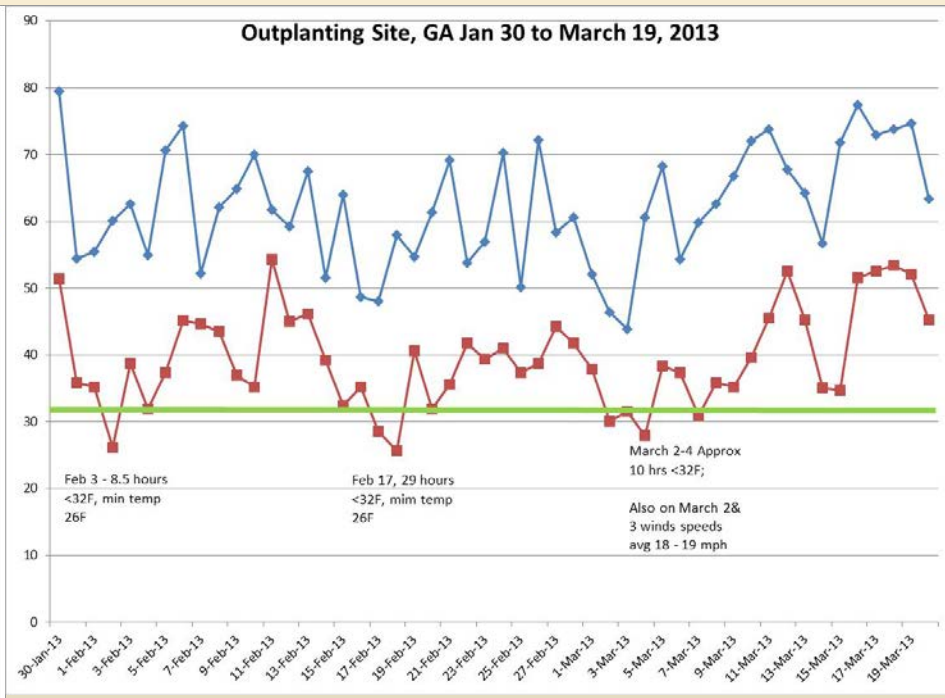
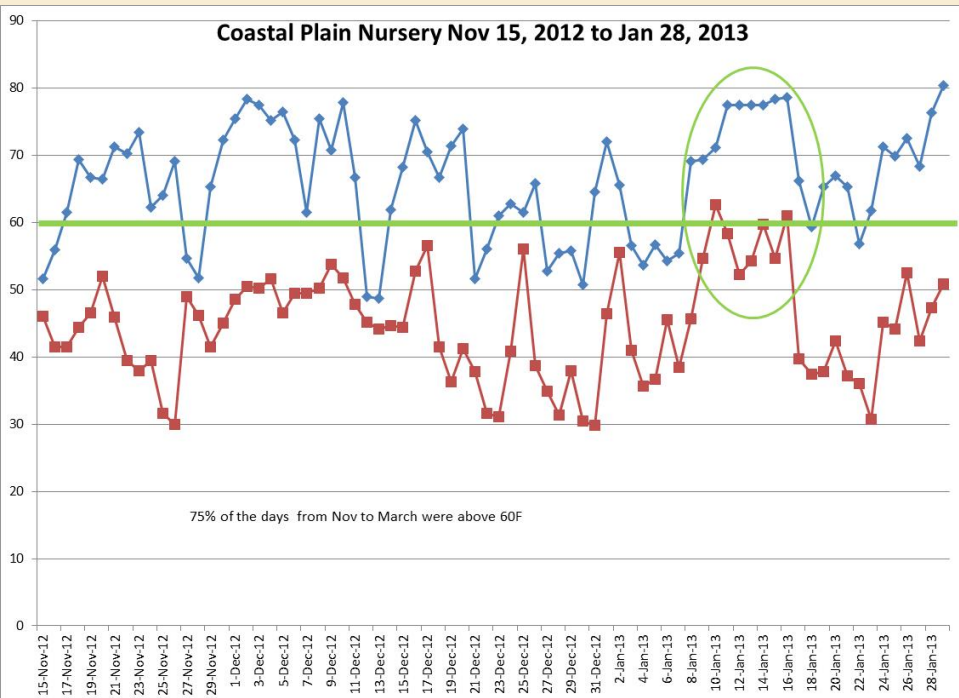
“Normal” Freeze Injury

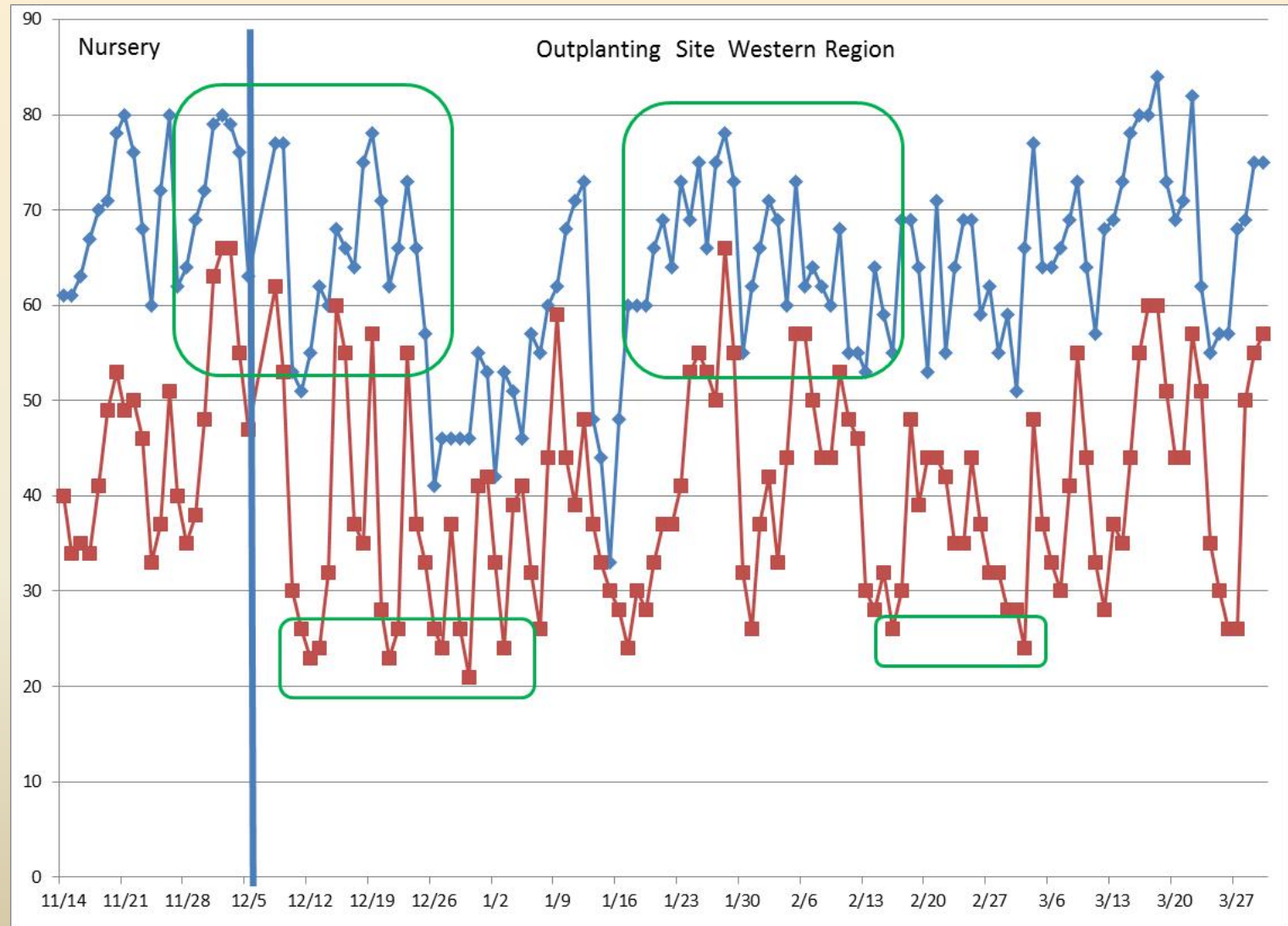


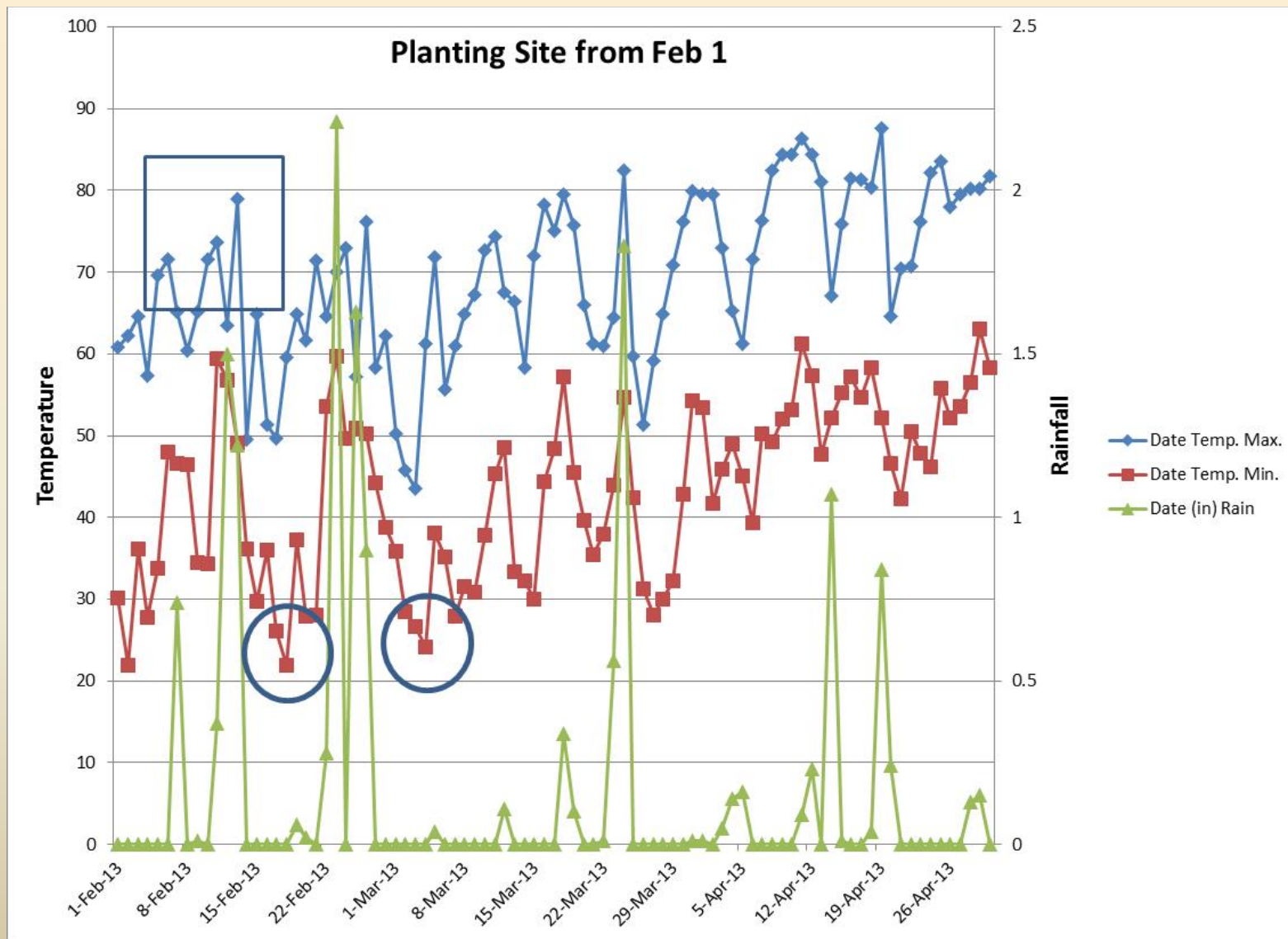
Freeze Injury 2013



Southern Forest Nursery Management Cooperative

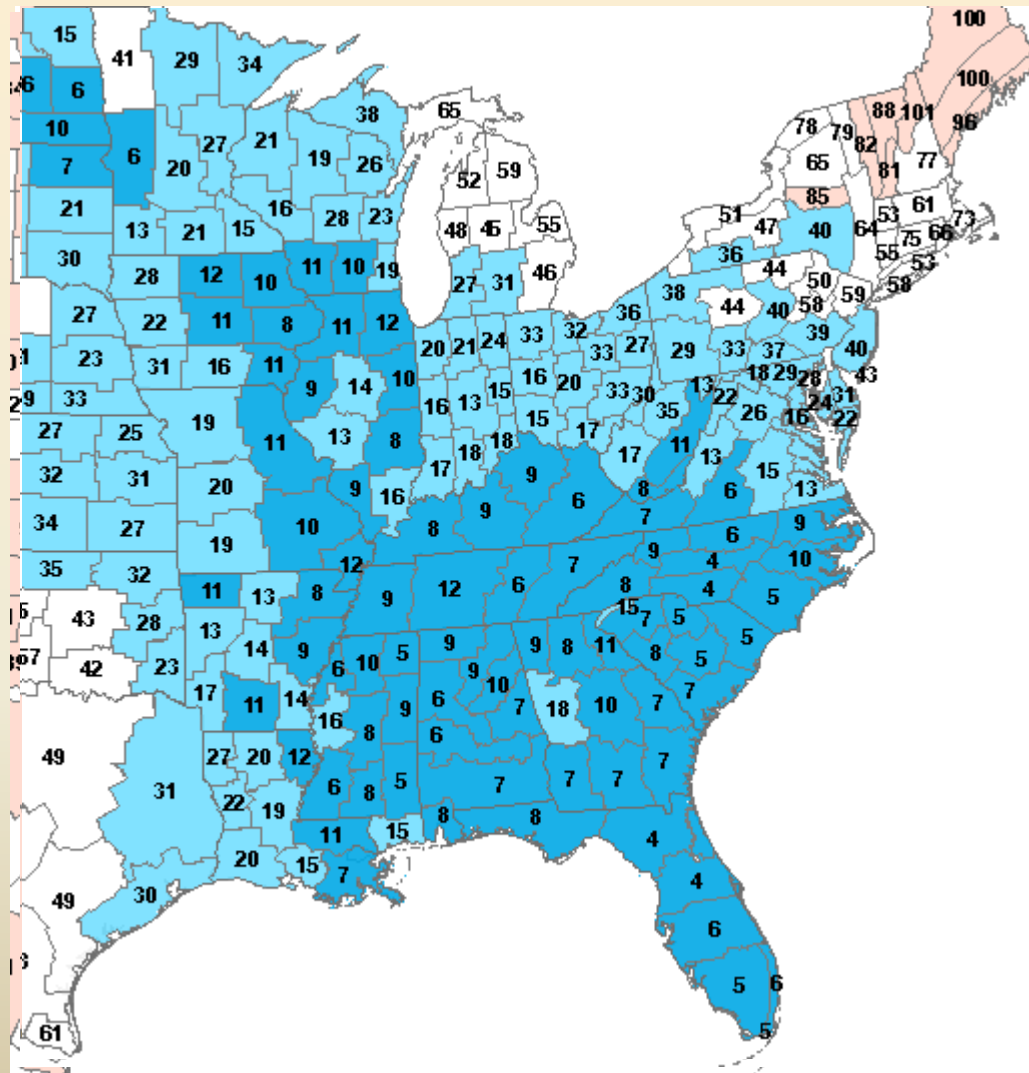




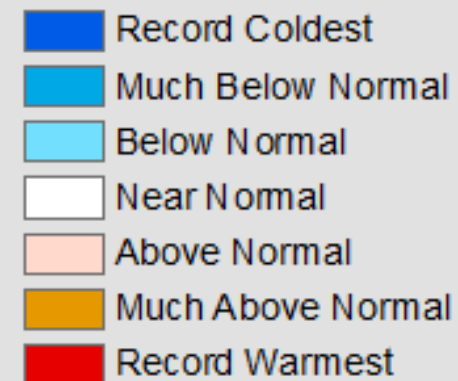


Regional Temperatures

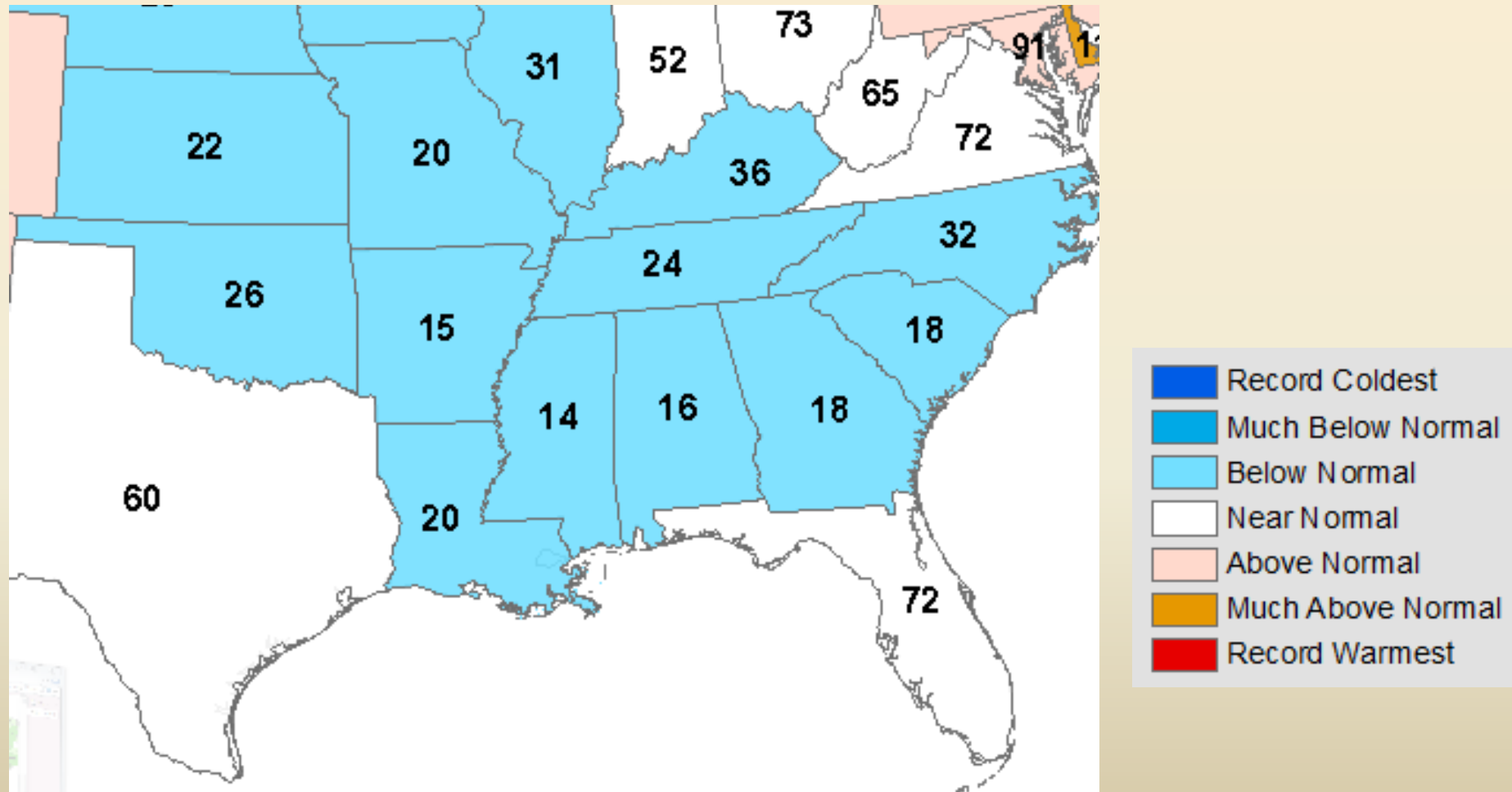
November 2012 to March 2013

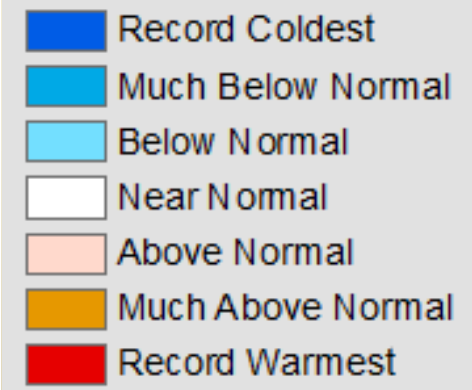


March 2013

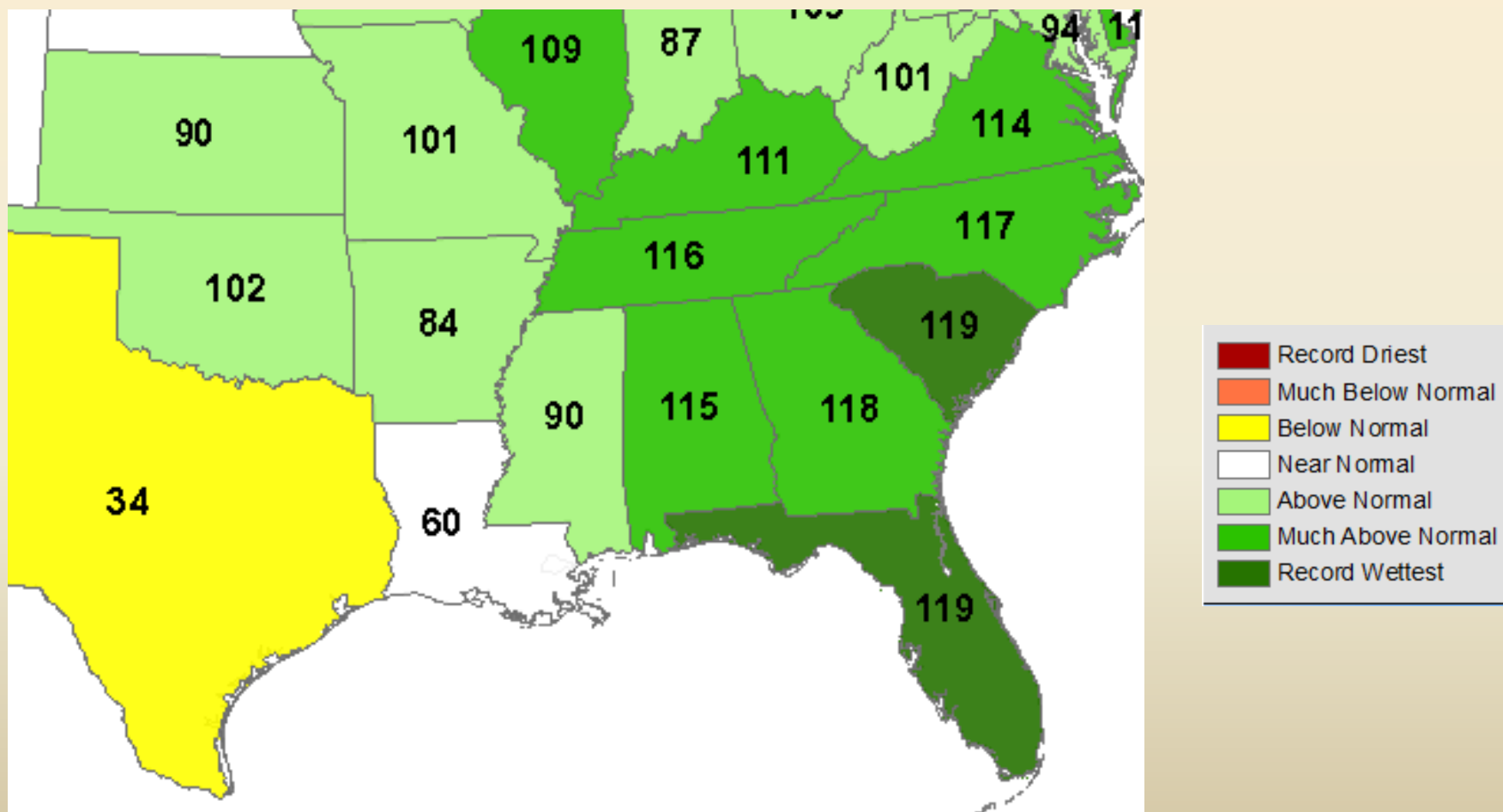


Regional Temperatures for Growing Season April to August 2013

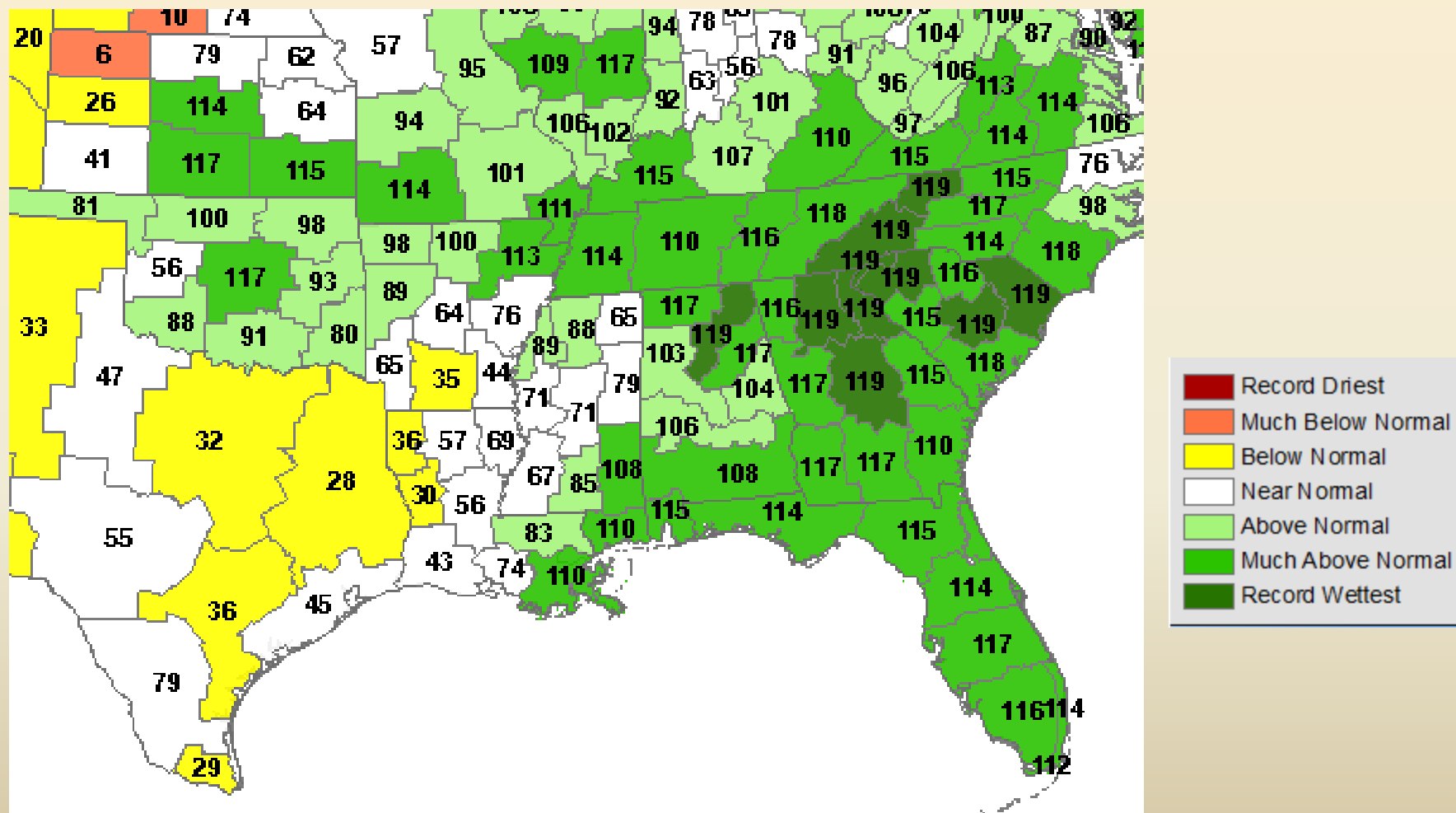




Regional Precipitation for Growing Season April to August 2013



Regional Precipitation for Growing Season April to August 2013

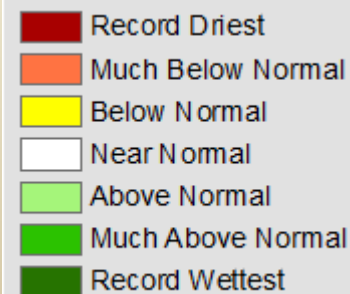
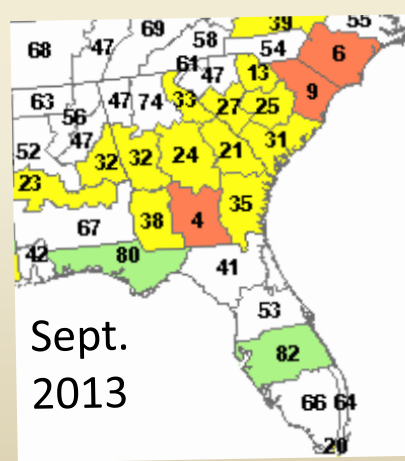
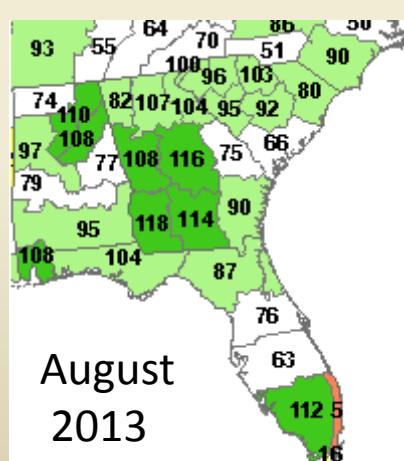
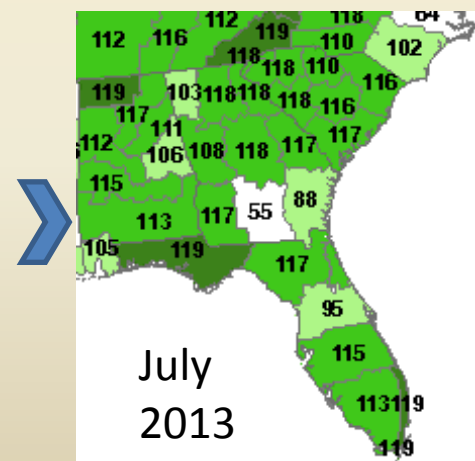
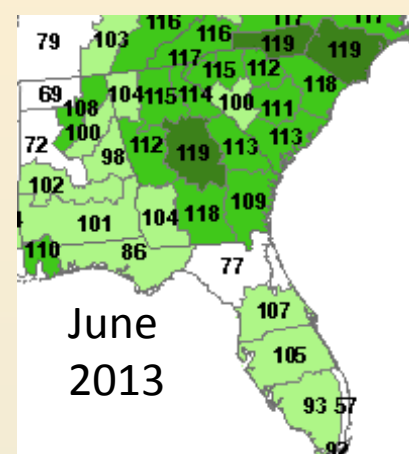
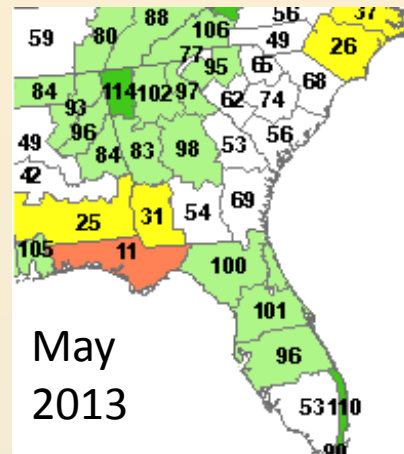
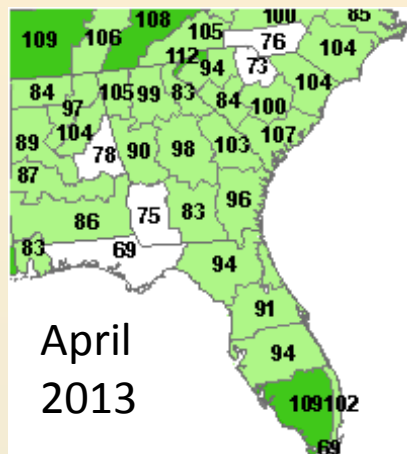
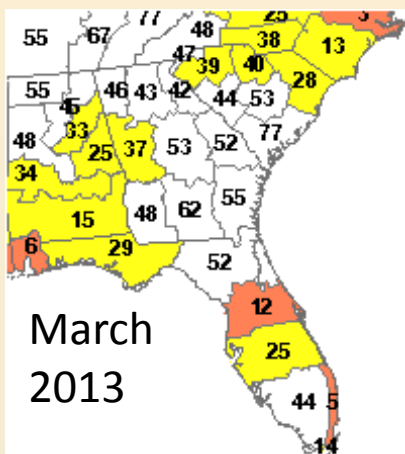


Lenticels

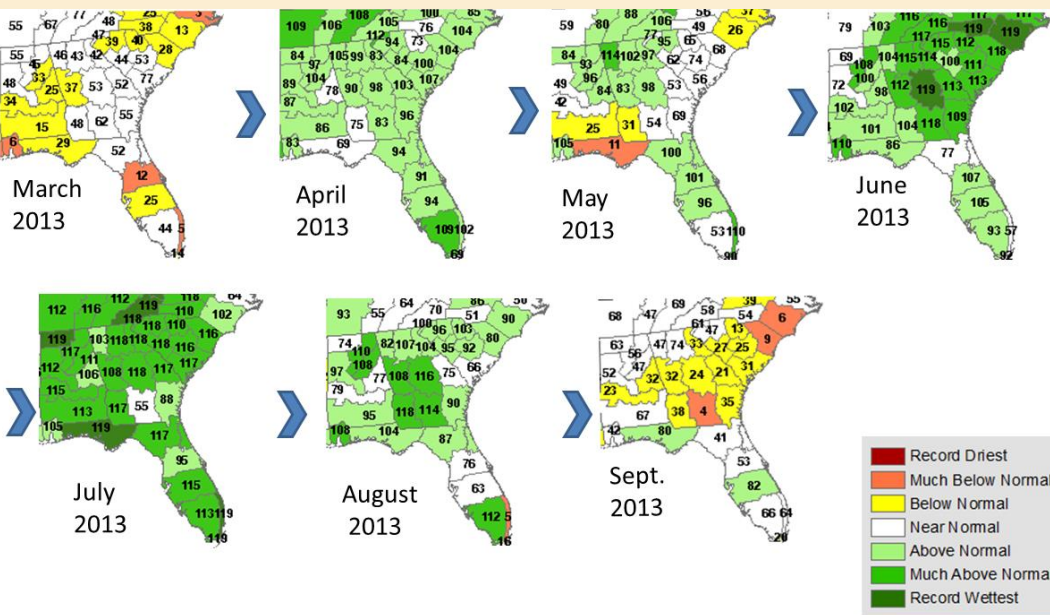
In September we began receiving seedlings like these with the report of late season seedling death



Why did seedlings die in September?



Why did seedlings die in September?



One Explanation:

1. Early season - good conditions for establishment.
2. Then came the rains of June, July and August.

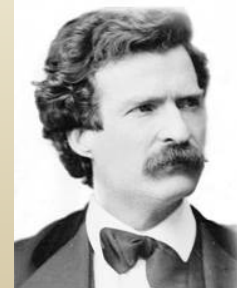
3. Anaerobic conditions occurred on some sites.
4. Some roots died but seedlings were able to live.
5. When the rains stopped in September and the seedlings started to resume growth, there were not roots to sustain the top.

Next Year?????

Any Bets????



**In the Spring, I have
counted 136 different
kinds of weather inside
of 24 hours.**



Mark Twain
American Author and Humorist
(1835-1910)
QuoteHD.com