AMS Meeting - 3/2/10

COD-Chicago AMS Joint Meeting
Special Guest: Victor Gensini, NIU Grad, future PhD candidate at Georgia

7:30pm – Announcements
  Chicago AMS:
  Winter Wx Forecasting seminar
  Chicago AMS Banquet
  Donation from Chicago AMS to COD AMS - $400
  COD AMS:
  Spotter Training
  Valparaiso Severe Wx Conference
  Des Moines Conference
  Tornado and Severe Storms seminar at Fermilab

7:45 – Victor Gensini: “Effects of the Cornbelt on Extreme Temperatures in the Midwest”

Background: Looking at hot days over 90 °F
  Avg. 24 hot days above 90
  Only 2 of the past 10 years have reached that level
  Lowest decadal total in 80 years
Common Midwest Question: Where have our 90 °F days gone?
  Inspired by Tom Skilling
  Chicago: Decreasing hot days since 1930s
  Other Midwest locations:
  Both rural and urban stations show a decreasing trend in “hot days”
  Regionally located – across the cornbelt region

Why regional climate trend?
  Enhanced summer evapotranspiration (ET) rates could act to lower max temps
  Agricultural practices are thought to have enhanced the movement of water vapor into
  the atmosphere, leading to a decrease in “hot days”
  However, precipitation values have remained unchanged since the 1930s across
  cornbelt

Could land use play a role?
  Corn and soybean crops dominate Midwest
  Crop yields have increased due to improved hybrids, irrigation, and increased use of
  fertilizers and pesticides
  No. of seeds planted per acre has nearly doubled
  Greatest ET occurs in July & August for soybeans
  If there is enough moisture in the air, the energy would be used for ET – would limit daily
  temps

Impact on Surface Dewpoint:
  Frequency of days with dewpoints >72 °F have increased in the Midwest
Where else is this detected?
  Increased summer “hot nights” >70 °F
  Smaller diurnal temperature ranges – due to amt of moisture in the air
The Changing Atmosphere:
  Circulation patterns could also limit frequency of “hot days”
  Recent cool summers ’04 & ’09 due to more days with upper level trough location over eastern US
Summary:
  Regional decrease in “hot days” related to increased ET
  Also consider:
  Sunshine levels
  Soil moisture levels

Questions

8:30pm – Meeting adjourned