

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