December 27, 2007

EL NINO TO LA NINA WEATHER EVENTS

Al Dutcher, Associate Geoscientist at the University of Nebraska, explained we are currently experiencing a moderate La Nina event that is bordering on a strong classification. La Nina events are characterized by abnormal cooling along the equatorial Pacific Region between South America and Australia. That gives us an enhanced northern jet stream, which allows for more frequent cold arctic intrusions to Nebraska and the northern United States.

Some areas of the country have strong statistical evidence (70% or greater) during these events including the Pacific northwest (wet), eastern Corn Belt (wet), southern one-third of the United States (warm, dry), and northern Plains (cold). These statistics are based upon all La Nina years.

However, when we see a move from an El Nino (warm Pacific waters) to La Nina in the same year (like this year), some interesting relationships are found in Nebraska climate records. There have been 10 La Nina episodes since 1953 (not including this year), of which seven began in the same year that an El Nino event ended. Looking at these past El Nino to La Nina events, eastern Nebraska has experienced below normal winter temperatures during five of the seven events. Get ready to bundle up this January! Although December can be below normal, January appears to have the strongest cold signal, with four of the events having average monthly temperatures less than 20 degrees F.

Precipitation is a mixed bag, four events saw above normal moisture, with three coming in below normal. Based upon the precipitation received in December (over 200 percent of normal so far), normal moisture through February will bring this winter into the above normal category. There is a tendency in the weather data to show that February is generally cold and snowy, with March cold and dry across eastern Nebraska. April and May can go either way, wet and cold or warm and dry. Dutcher's research shows this is tied to the length of the La Nina event. If the event dies early, then drier conditions prevail, if it holds on, then odds on favorite, wet and cold.

Dutcher is concerned about significant melting events and spring moisture. Based upon precipitation during the spring, summer, and fall, considerable soil moisture has been stored and above normal moisture the next few months will significantly increase flood risks going into the spring.

Western Nebraska typically sees below normal temperatures and above normal moisture during the winter and spring, irregardless of when the La Nina event ends. This is important because if the event continues into a second year (current odds 50/50, up from 30/70 two months ago), there is a strong tendency for July and August to have above normal temperatures, with a strong tendency for below normal moisture during July. That signal disappears across eastern Nebraska, with only a weak tendency for above normal temperatures and below normal moisture.

Therefore, with soil moisture abundant, Dutcher feels the biggest issue for eastern Nebraska could be spring planting delays with little room to put additional moisture. Dutcher expects with normal

moisture through April, soil profiles (down to 5 feet) across most of eastern Nebraska will be at levels not experienced since the late 1990's. Plus, there is a tenancy in the eastern Corn Belt of the United States for a summer drought. Dutcher will relay weather information at least monthly through Crop Watch newsletter, Market Journal, radio, and talks across the state in 2008.

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