

Growing Degree Days

a look back at the last 5 years

Paul Read

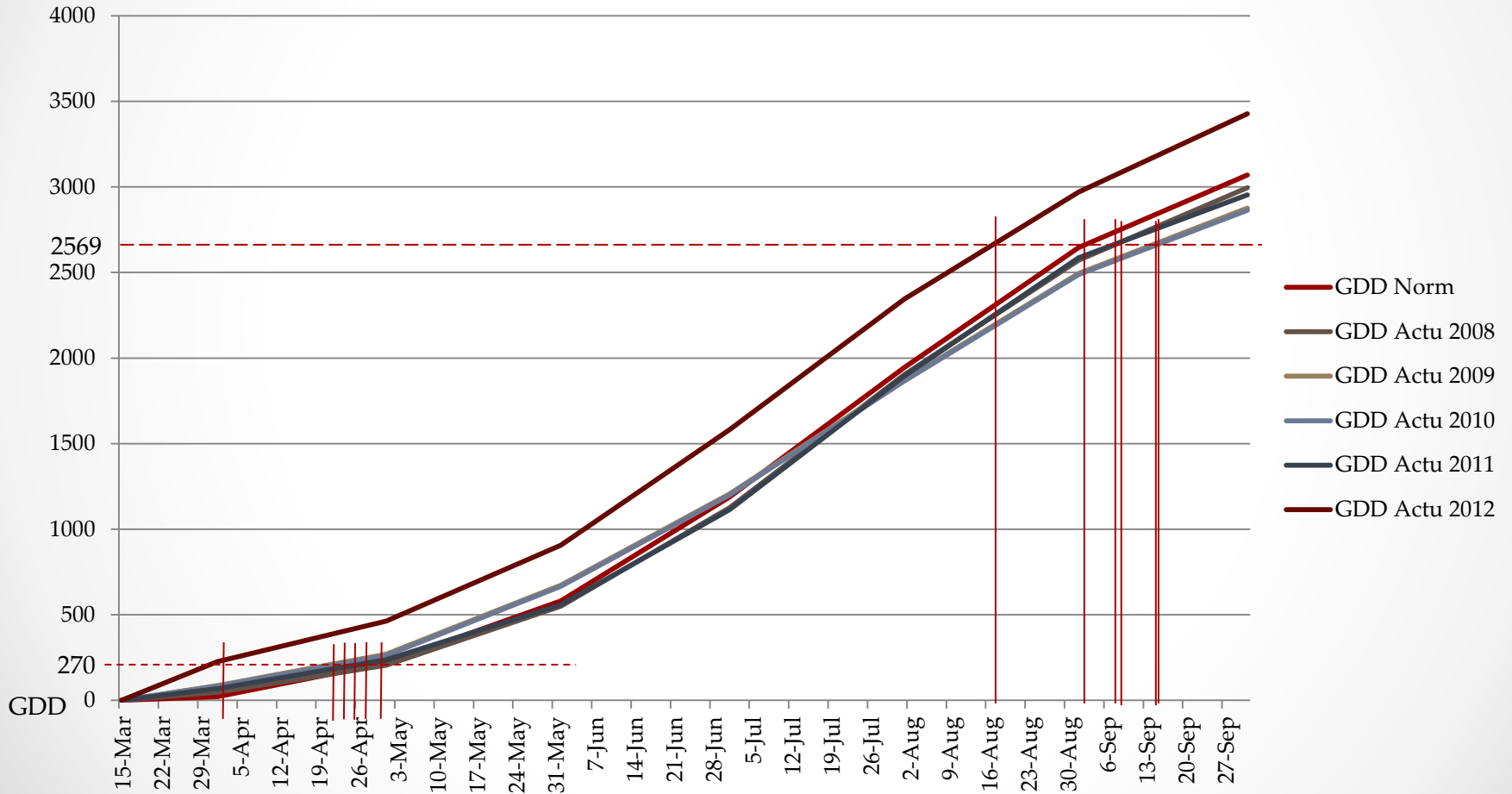
Stephen Gamet



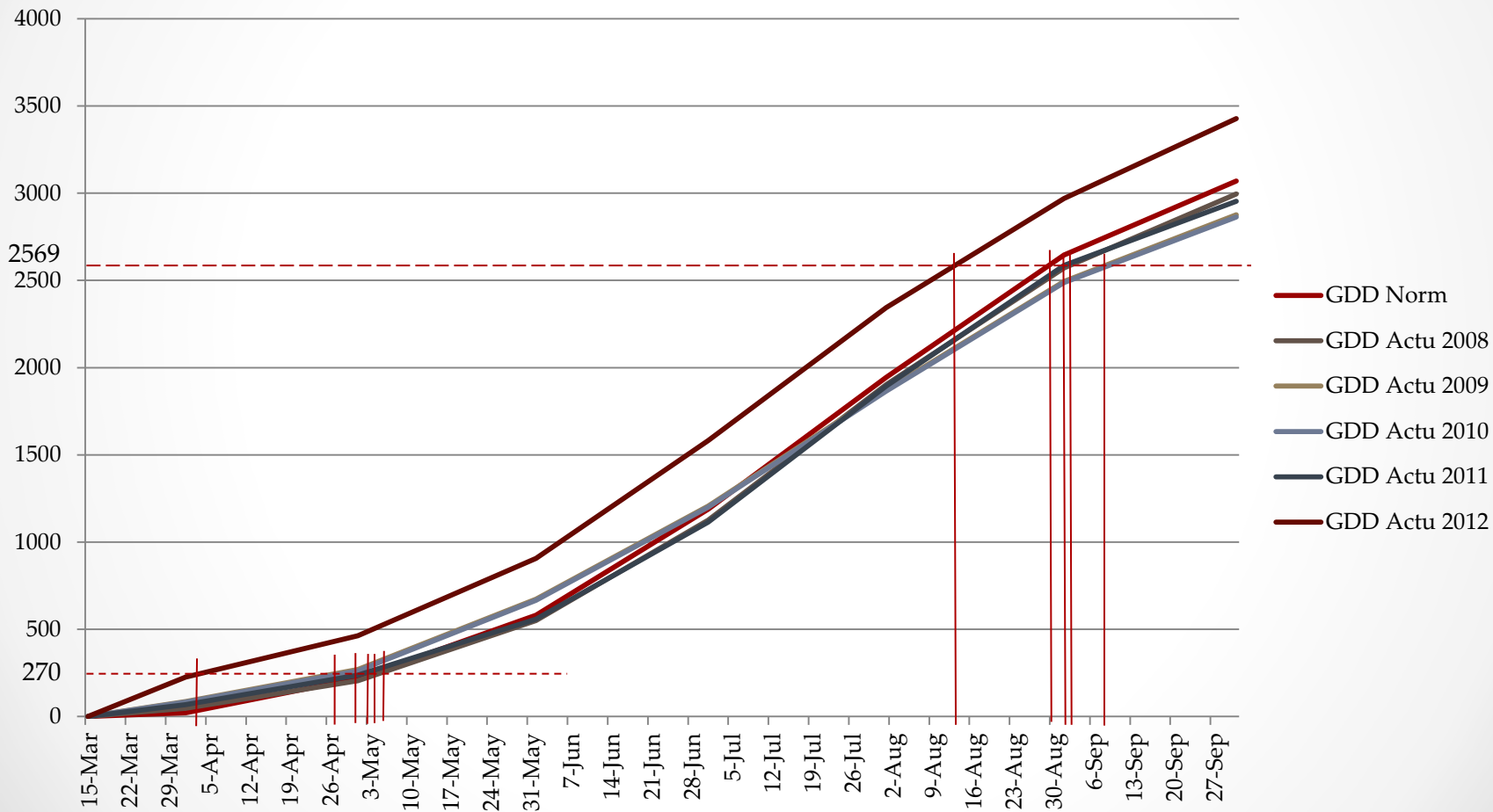
University Of Nebraska Viticulture Program

<http://agronomy.unl.edu/viticulture>

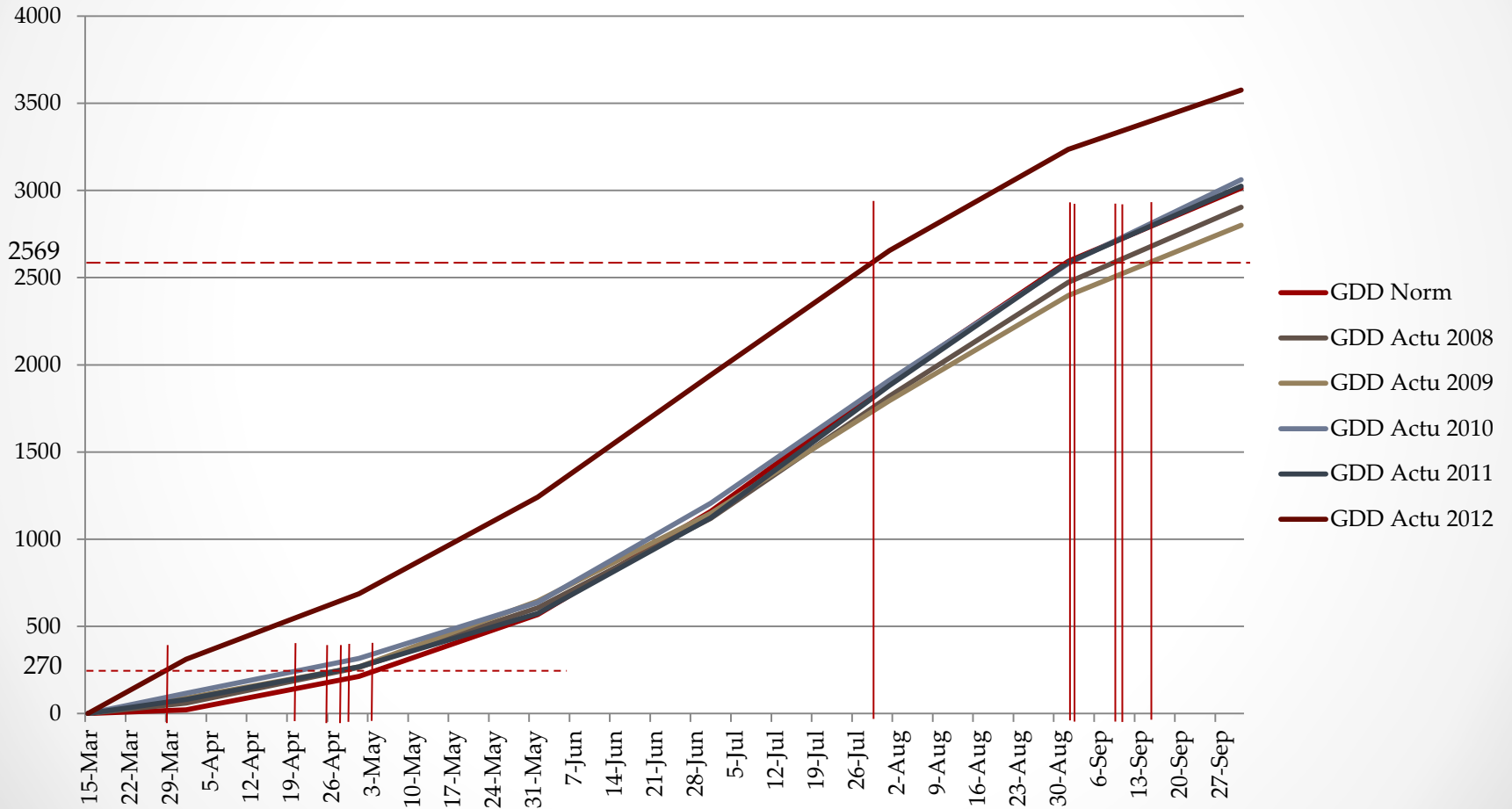
Nebraska City



Lexington



Brule



Nebraska City

Year	Bud Break	Maturity
	271 GDD (May 6)	2569 GDD (Aug 16)
2008	May 9	Aug 22
2009	Apr 25	Aug 23
2010	Apr 17	Aug 9
2011	Apr 27	Aug 11
2012	Apr 1	Jul 26

Lexington

Year	Bud Break	Maturity
	271 GDD (May 9)	2569 GDD (Aug 28)
2008	May 10	Sept 1
2009	May 2	Sept 6
2010	May 2	Sept 6
2011	May 6	Aug 13
2012	Apr 9	Aug 11

Brule

Year	Bud Break	Maturity
	271 GDD (May 1)	2569 GDD (Aug 28)
2008	May 3	Sept 10
2009	May 2	Sept 10
2010	Apr 24	Aug 13
2011	May 1	Aug 13
2012	Apr 8	Aug 11

Historical Trends

Information is from

NOAA Technical Report NESDIS 142-4

Regional Climate Trends and Scenarios for

The U.S. National Climate Assessment

Part 4. Climate of the U.S. Great Plains



Historical Trends

- Temperatures have generally been above the 1901-1960 average for the last 20 years, both annually and seasonally. Eight of the past ten summers (2002-2011) have been above the 1901-1960 average.
- Temperature trends are statistically significant (at the 95% level) for all seasons in the northern Great Plains and all seasons except summer and fall in the southern Great Plains.



Historical Trends

- Annual precipitation for the Great Plains was greater than normal during the 1990s, less than normal during the early 2000s and greater than normal during the last few years except for 2011. Trend in precipitation are not statistically significant for any season.
- Extreme cold and hot periods exhibit a large amount of interannual variability. The frequency of extreme cold periods has generally been low since 1990, averaging 65% below the long-term mean

Historical Trends

- Occurrence of extreme (heavy) precipitation events also exhibits substantial interannual and decadal-scale variability. Since 1990, there have been several of years with a very high frequency of extreme precipitation events, with the greatest overall value of 1-day events occurring in 2007.
- There has been a generally increasing trend in freeze-free season length since the early 20th century. The average freeze-free season length during 1991-2010 was about 6 days longer than during 1961-1990.

2012 Brief Year in Review

- 2012 was a warm dry year
 - Average temperatures 3-5 degrees F above normal
 - Drought conditions affected most all the state
 - First tornadoes to ever be reported in February in Nebraska (North Platte and Greeley)
 - 50 Tornadoes were confirmed in NE & KS on April 14
 - 17 Days in 2012 over 100 Degrees
 - 2011, 3 Days over 100 Degrees

2012 Brief Year in Review

Temperatures

Location	Jan-Dec Aver. Temp	Rank Record or Previous Record	Year of Record
Lincoln	54.7 / 6 th warmest	55.7 / 1934	1887-2012
Grand Island, NE	55.1 / 4 th warmest	56.2 / 1934	1895-2012
Scottsbluff, NE	53.1 / warmest	52.9 / 1981	1893-2012
Norfolk, NE	53.3 / warmest	52.7 / 1931	1893-2012
Valentine, NE	52.1 / warmest	51.2 / 1934	1889-2012

2012 Brief Year in Review

Precipitation

Location	Jan-Dec Precipitation	Rank Record or Previous Record	Year Period of Record
Lincoln, NE	19.14 / 11th driest	13.94 / 1936	1887-2012
Grand Island, NE	11.55 / driest	12.01 / 1940	1895-2012
Scottsbluff, NE	6.99 / driest	7.70 / 1964	1893-2012
Norfolk, NE	14.50 / 2nd driest	13.80 / 1894	1893-2012
Valentine, NE	10.68 / 3rd driest	10.14 / 1894	1889-2012