Issue 464

K-STATE Research and Extension

Extension Agronomy

eUpdate

07/03/2014

These e-Updates are a regular weekly item from K-State Extension Agronomy and Steve Watson, Agronomy e-Update Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Steve Watson, 785-532-7105 swatson@ksu.edu, Jim Shroyer, Crop Production Specialist 785-532-0397 jshroyer@ksu.edu, or Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

eUpdate Table of Contents | 07/03/2014 | Issue 464

1. Farewell note from Jim Shroyer

I want to thank former and current county Extension ag agents, farmers, and agribusiness folks for 34 years of working with me. It has been my privilege to have worked with you. This has been a great job -- the wheat specialist in the wheat state. It doesn't get any better than that!

As most of you know, I used to cover all crops and received all sorts of questions. My very first question from a farmer was "what does a bushel of cow manure weigh"? The manure spreader was calibrated in bushels instead of pounds. Of course, I responded with a question -- "Hereford or Holstein"? At any rate, it took me forever to figure that one out.

I want to wish you all the best and hope our paths will cross again.

Thank you,

Jim

(Editor's note: Jim Shroyer is officially retiring from K-State as of July 3. Shroyer was the one who originated the Agronomy eUpdate in 2006, and has been a regular contributor and the technical adviser for each overall issue from the beginning. He has overseen the phenomenal growth and popularity of this newsletter. – Steve Watson, Editor)

2. Wheat blends: Advantages and disadvantages

Blends of multiple wheat varieties have some advantages in many situations. I prefer a 3-way blend. Blends can offer producers some yield stability in most cases. While any one variety may do much better or worse than other varieties in the same vicinity, having a blend of two or three varieties can usually even out those ups and downs. This reduces the chances of having a landlord upset because the variety planted on his or her land yielded considerably less than other fields in the area.

Blends have been used more widely in north central Kansas than any other region in the state over the past five years, according to the Kansas Agricultural Statistics Service annual survey of Wheat Varieties. The acreage planted to blends tends to be affected by the availability of blends from local certified seed producers and the timing of new variety releases and their performance when planted alone in a particular district.

Percent acreage planted to blends in Kansas by district: 2010-2014					
District	**2010**	**2011**	**2012**	**2013**	**2014**
Northwest	6.2	7.6	6.0	5.7	10.1
West Central	8.4	5.0	4.6	6.7	7.7
Southwest	3.7	2.0	7.4	3.7	4.0
North Central	30.5	31.1	21.2	21.0	21.8
Central	14.9	19.2	12.3	16.3	16.1
South Central	9.6	7.6	7.5	7.8	10.8
Northeast	13.2	22.7	7.5	9.6	9.8
East Central	26.9	16.4	22.1	13.0	15.8
Southeast	3.1	2.2	5.2	2.8	6.9
Average	11.6	11.1	9.0	8.8	10.4

Source: Kansas Agricultural Statistics Service

To be effective in stabilizing yield potential, consideration should be given to which wheat varieties to use in making a blend. Here are some basic principles:

- Use varieties with different types of disease resistance. Although the cost effectiveness of fungicides now may reduce the importance of this factor, there is still value to having at least one natural source of resistance to diseases.
- Use varieties with slightly different maturities. If producers can spread out the maturity a bit, there is a better chance that at least one of the varieties can benefit from a given weather pattern. For example, later-maturing variety might be able to take better advantage of a late rain than an early-maturing variety. Spreading maturities may require some compromises, however. If the earlier-maturing variety in the blend has a tendency to shatter, the producer should be willing to harvest the field as soon as the early variety component in the blend is ready – which means the producer will have to be willing to take a moisture discount at times. If the earlier variety component in the blend has good shattering tolerance, then the producer can wait until the later variety component is fully dried down before harvesting.
- Use varieties with different levels of winterhardiness and spring greenup tendencies. If there are high-yielding varieties available, but which have poor winterhardiness or a tendency to

break dormancy early in the spring, blend them with varieties that have better winterhardiness or a stronger spring dormancy.
- Use varieties that yield well. Do not include a low-yielding variety just for the sake of genetic diversity.
- Do not be afraid to use the very newest varieties. Generally, I like to see new varieties on their own at first to find their strengths and weaknesses. But there's no reason that the newest releases cannot be used in a blend, either.

It should be mentioned that blends do have some disadvantages. Blends are unlikely to result in the highest yields possible in any given year. And blends do not provide the same level of management flexibility as a pure variety.

Jim Shroyer, Crop Production Specialist
jshroyer@ksu.edu

El Niño has crept back into weather and climate conversation. El Niño generally refers to the development of an abnormally warm pool of water in the eastern Pacific Ocean. An official El Niño requires the Ocean Niño Index (ONI) to be +0.5 degrees C for 5 consecutive 3-month periods. An illustration of that pattern is shown below:

Central Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Triad of months	**DJF**	**JFM**	**FMA**	**MAM**	**AMJ**	**MJJ**	**JJA**	**JAS**	**ASO**
	DJF	**JFM**	**FMA**	**MAM**	**AMJ**	**MJJ**	**JJA**	**JAS**	**ASO**
	DJF	**JFM**	**FMA**	**MAM**	**AMJ**	**MJJ**	**JJA**	**JAS**	**ASO**
2014 ONI	-0.6	-0.6	-0.5	-0.2					*

***Earliest point for an El Niño to be declared would be September. October or November is more likely.**

Depending on its strength, the impacts can be felt around the world. Southern California often has excessive winter rains when an El Niño is in place. The Pacific Northwest, however, frequently sees drought conditions develop. The further you get from the coast, however, the less direct and the less consistent the impacts. In Kansas, an El Niño generally means a milder-than-normal winter, with a greater likelihood of wetter conditions in the southern tier of counties.

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/ENSO/composites/

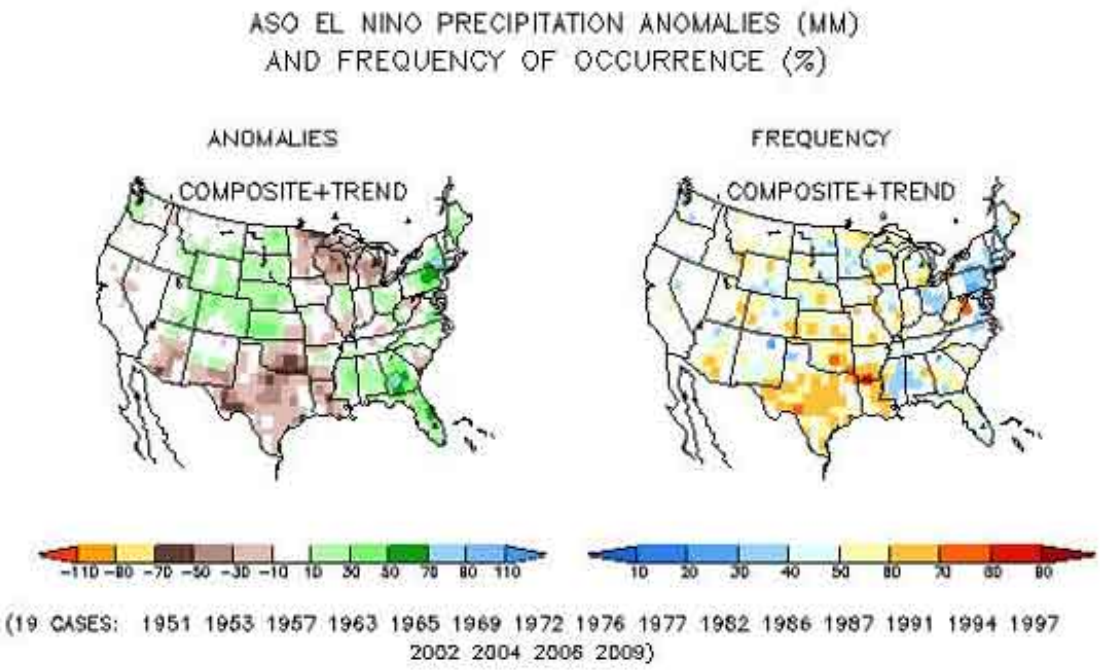


Figure 1. El Nino precipitation anomalies.

Mary Knapp, Weather Data Library
mknapp@ksu.edu

4. Sooty molds and black point in wheat

With multiple rain delays slowing the progress of wheat harvest, some areas of the state are reporting sooty molds and grain with a discoloration known as black point. Both of these problems are caused by molds that grow on the mature wheat.

These molds are normally not aggressive pathogens in wheat, but they can rapidly colonize mature plants. These diseases are most problematic when rain re-wets mature plants and causes harvest delays. The sooty molds are often a cosmetic problem because the mold growth is very superficial on the chaff and glumes. The sooty molds can make for a dusty harvest, however. If the timing of the rain coincides with the late stages of kernel development, the molds can begin to colonize the outer layers of the wheat kernel, resulting in a gray-black discoloration called black point. Commonly, the embryo end of the kernel is most discolored, but entire kernels can become gray or black as result of the black point.

There is no management of these diseases at this time. The fungi that cause black point can cause problems with germination and reduce seedling vigor. Therefore, seed lots with symptoms of black point should be tested for germination. If black point is causing germination problems, fungicide seed treatments can often improve the germination and ensure good stand establishment.

Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

Figure 1. Wheat head with symptoms of sooty mold. Photo by Erick DeWolf, K-State Research and Extension.

Figure 2. Wheat kernels with symptoms of black point (top row of kernels is healthy). Photo by Erick DeWolf, K-State Research and Extension.

Erick De Wolf, Extension Plant Pathology
dewolf1@ksu.edu

As the wheat harvest continues across the state many farmers are evaluating the performance of their current varieties and considering new varieties they should grow in the future. Clearly, the yield potential of wheat variety is a top priority, but resistance to diseases and insect pests are also important to consider when selecting a variety. The "Wheat Variety Disease and Insect Ratings" provided by K-State Research and Extension can help growers identify the best varieties for their farms. The publication also provides helpful summaries to help growers better understand the historical risk of diseases in their area and quickly identify the varieties with the best overall disease resistance.

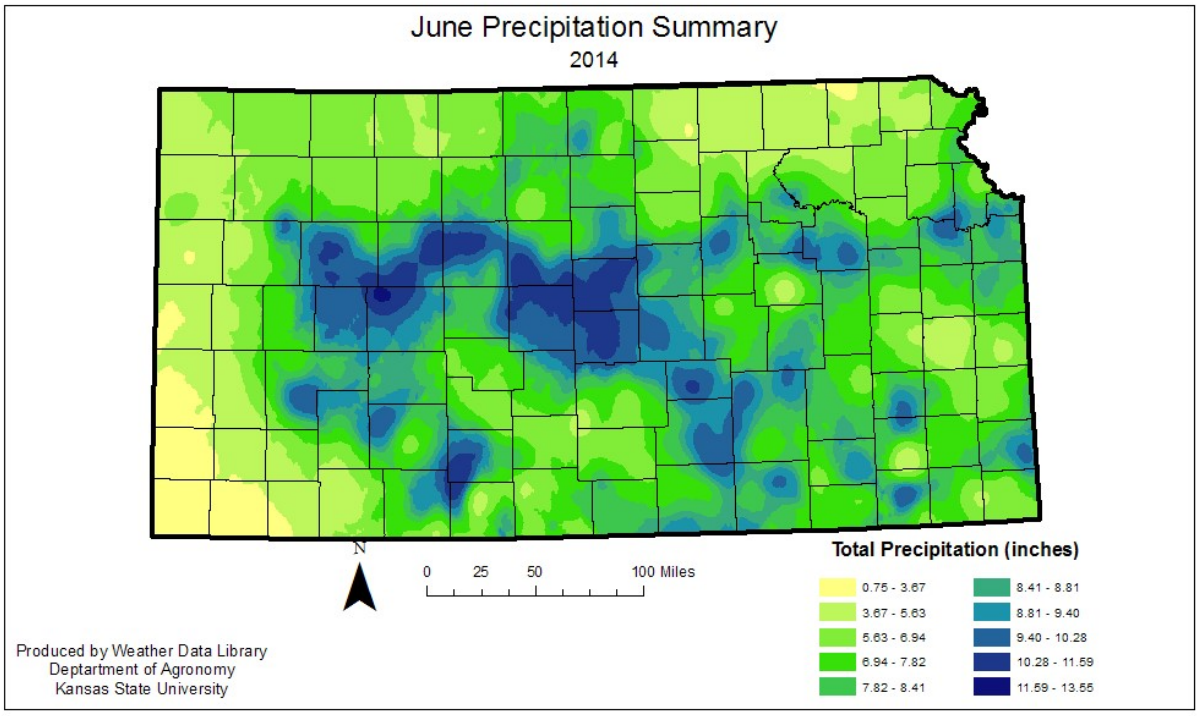
Electronic versions of the Wheat Variety Disease and Insect Rating, 2014 publication (MF991) can be found at: http://www.ksre.ksu.edu/bookstore/pubs/MF991.pdf

Printed copies of the publication should be available in many county Extension offices within a few weeks.

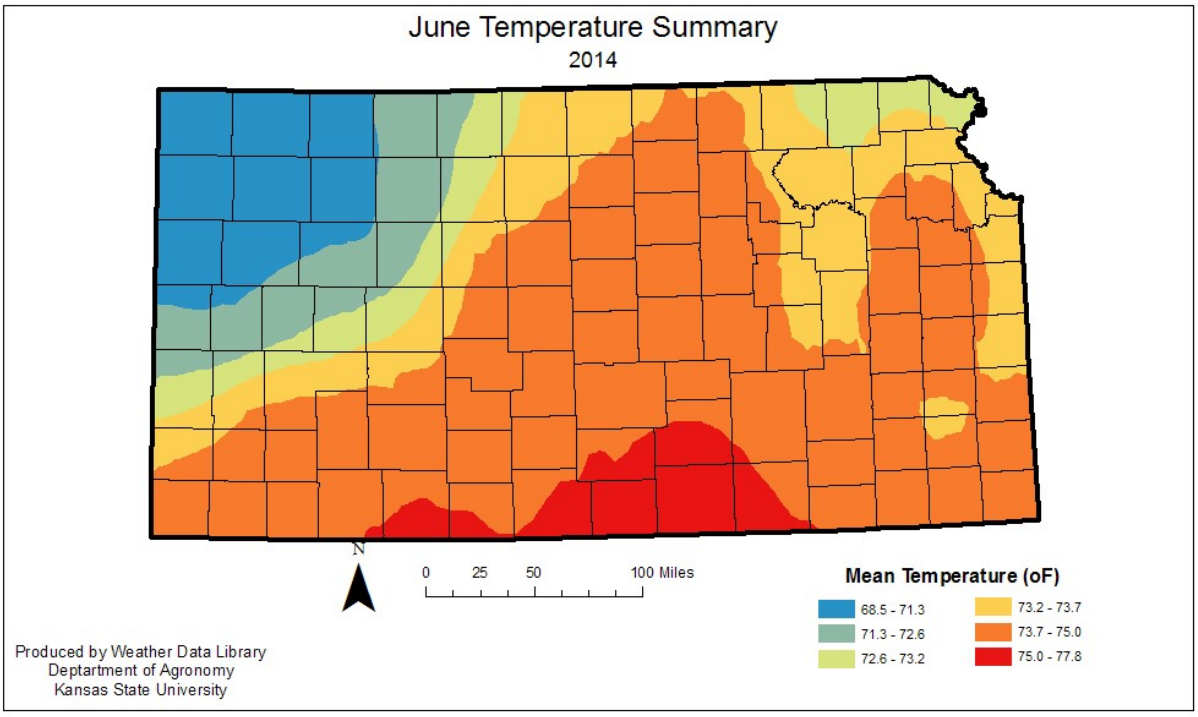
Erick De Wolf, Extension Plant Pathology
dewolf1@ksu.edu

6. June weather summary for Kansas: Rain returns

Much of Kansas was wetter than normal in June. Statewide, the average precipitation was 7.25 inches, which places it as the fifth wettest June since 1890. All divisions averaged wetter than normal, but distribution wasn't evenly spread even within the divisions. The West Central Division had the biggest departure from normal. The West Central Division had an average precipitation of 7.99 inches, which is 280 percent of normal. The Northeast Division was closest to normal with an average of 6.44 inches, or 130 percent of normal. In the Southwest, the extreme western counties continue to miss out on the major precipitation events. In Hamilton County, totals ranged from just over an inch near Kendall to almost 6 inches north of Syracuse. The greatest daily precipitation reported was 7.20 inches at Mullinville in Kiowa County on June 2.



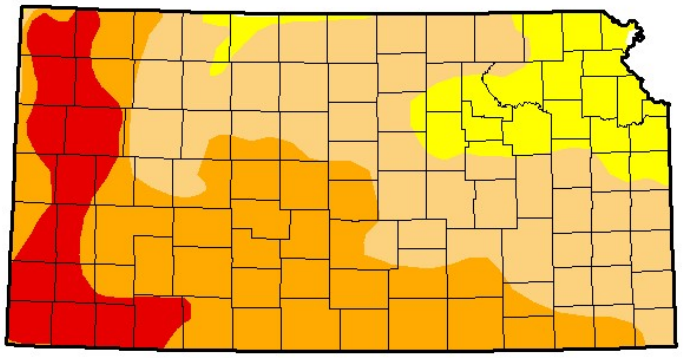
The statewide average temperature for the month was very close to normal, at 75.4 degrees F, or just 0.2 degrees warmer than normal. The warmest reading reported was 104 degrees on the 18th at Lakin. Only two new daily maximum temperature records were set, both in western Kansas. There were 15 record low maximum temperatures recorded. On the cold side of temperatures, there were 23 new daily high minimum temperature records set, and three record low minimum readings set.



Drought conditions persist across the state. Only a tiny sliver of extreme Northeastern KS is in near-normal conditions. However, the area of extreme drought has been reduced, particularly in Central and South Central Kansas. There was a small increase in extreme drought in extreme southwestern Kansas, where rainfall was more limited. Nearly 45 percent of the state is now in extreme drought conditions and an additional 29 percent of the state is in severe drought. The wet June, and the neutral outlook for July, gives some hope that conditions will continue to improve. The El Niño/Southern Oscillation (ENSO) is expected to switch to an El Niño event by late summer, but it remains to be seen what impact will be felt. The July temperature outlook is neutral statewide, with an increased chance of cooler-than-normal temperatures in the desert Southwest through Colorado. The precipitation outlook is also neutral, with equal chance of above- or below-normal precipitation for July. This does not indicate how that moisture might be distributed, and means heavy rains or extended dry periods are both possible.

U.S. Drought Monitor

Kansas



July 1, 2014

(Released Thursday, Jul. 3, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	0.17	13.53	39.18	34.48	12.63	0.00
Last Week 6/24/2014	0.09	13.30	38.51	27.48	20.61	0.00
3 Months Ago 4/1/2014	0.00	1.21	33.87	50.57	14.34	0.00
Start of Calendar Year 12/31/2013	4.71	48.37	13.04	28.30	5.58	0.00
Start of Water Year 10/1/2013	46.14	13.58	8.35	27.98	3.96	0.00
One Year Ago 7/2/2013	14.29	11.16	15.92	13.90	20.63	24.11

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/

Percent Change in Drought Monitor Conditions in Kansas

from end of May to end of June, 2014

Week	Nothing	D0 (abnormally dry)	D1 (moderate)	D2 (severe)	D3 (extreme)	D4 (exceptional)
1-Jul-14	0.2	13.5	39.2	34.5	12.6	0.0
27-May-14	0.0	1.2	18.0	32.5	45.2	3.1
Improvement	**0.2**	**12.4**	**21.2**	**2.0**	**-32.6**	**-3.1**

June 2014

Kansas Climate Division Summary

	Precipitation (inches)						Temperature (°F)			
	June 204			2014 Jan through June					Monthly Extremes	
Division	**Total**	**Dep.** [1]	**% Normal**	**Total**	**Dep.** [1]	**% Normal**	**Ave**	**Dep.** [1]	**Max**	**Min**
Northwest	4.96	2.13	176	8.83	-1.84	82	70.4	-0.5	101	41
West Central	7.99	5.18	280	10.54	0.29	100	71.8	0.1	101	41
Southwest	6.19	2.98	186	8.27	-1.69	80	74.4	1.1	103	46
North Central	6.44	2.61	171	11.34	-2.56	81	73.7	0.4	99	47
Central	8.81	4.73	221	13.64	-1.33	91	74.6	0.2	100	48
South Central	8.31	3.52	174	12.58	-3.92	76	74.9	-0.1	95	51
Northeast	6.44	1.30	130	13.83	-3.56	80	73.7	0.8	94	46
East Central	7.43	1.85	133	14.21	-5.00	73	73.6	0.3	94	50
Southeast	8.12	2.18	136	15.04	-6.56	69	74.0	-0.2	92	51
STATE	7.25	2.99	178	11.96	-2.98	80	73.5	0.2	103	41

1. Departure from 1981-2010 normal value

Source: KSU Weather Data Library

Mary Knapp, Weather Data Library
mknapp@ksu.edu

7. Comparative Vegetation Condition Report: June 17 - 30

K-State's Ecology and Agriculture Spatial Analysis Laboratory (EASAL) produces weekly Vegetation Condition Report maps. These maps can be a valuable tool for making crop selection and marketing decisions.

Two short videos of Dr. Kevin Price explaining the development of these maps can be viewed on YouTube at:
http://www.youtube.com/watch?v=CRP3Y5NIggw
http://www.youtube.com/watch?v=tUdOK94efxc

The objective of these reports is to provide users with a means of assessing the relative condition of crops and grassland. The maps can be used to assess current plant growth rates, as well as comparisons to the previous year and relative to the 25-year average. The report is used by individual farmers and ranchers, the commodities market, and political leaders for assessing factors such as production potential and drought impact across their state.

NOTE TO READERS: The maps below represent a subset of the maps available from the EASAL group. If you'd like digital copies of the entire map series please contact NanAn at nanan@ksu.edu and we can place you on our email list to receive the entire dataset each week as they are produced. The maps are normally first available on Wednesday of each week, unless there is a delay in the posting of the data by EROSDataCenter where we obtain the raw data used to make the maps. These maps are provided for free as a service of the Department of Agronomy and K-State Research and Extension.

The maps in this issue of the newsletter show the current state of photosynthetic activity in Kansas, the Corn Belt, and the continental U.S., with comments from Mary Knapp, service climatologist:

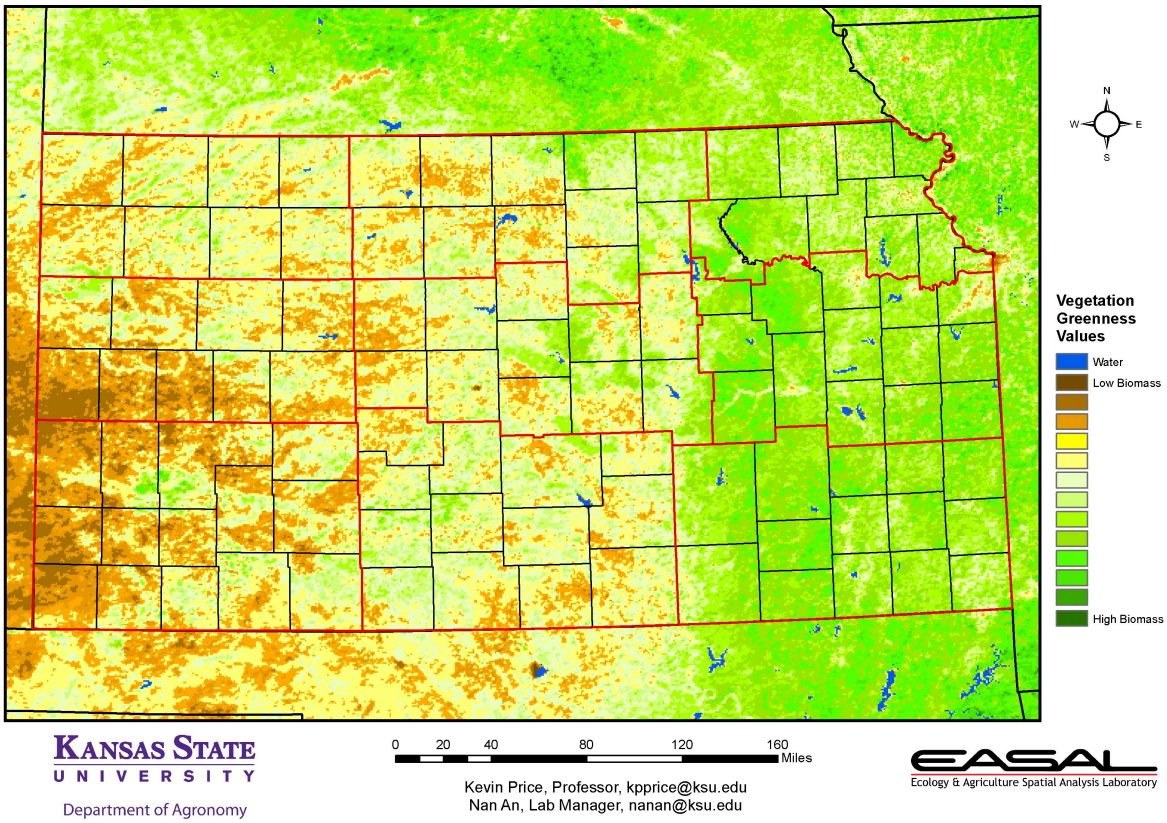


Figure 1. The Vegetation Condition Report for Kansas for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the areas of high photosynthetic activity are moving into central and southwestern Kansas as rainfall in these areas increase. There are still large areas of low biomass production in west central and the western counties of southwest Kansas.

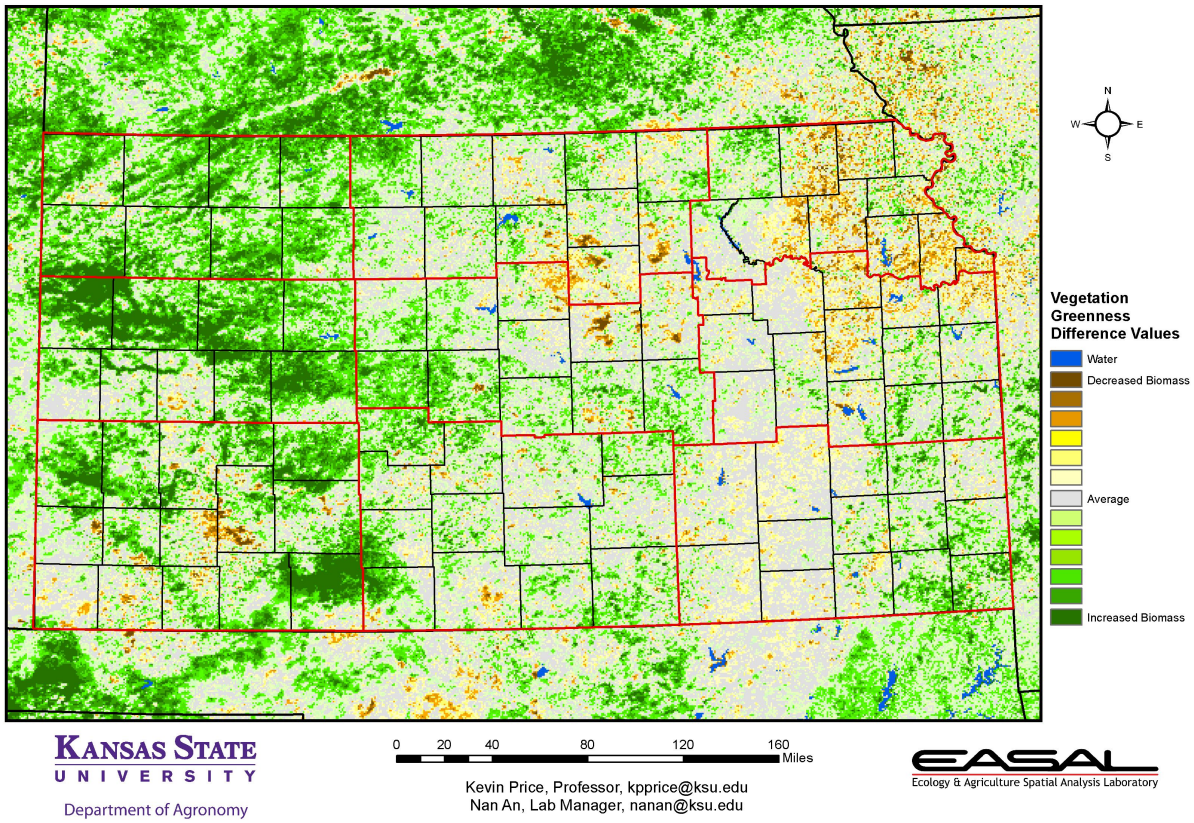


Figure 2. Compared to the previous year at this time for Kansas, the current Vegetation Condition Report for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that most of the state has much higher NDVI values. The greatest increases are from Wallace to Ness counties and in Clark County. Sharon Springs, in Wallace County, reported 2.68 inches in June this year, compared to 0.56 inches last June.

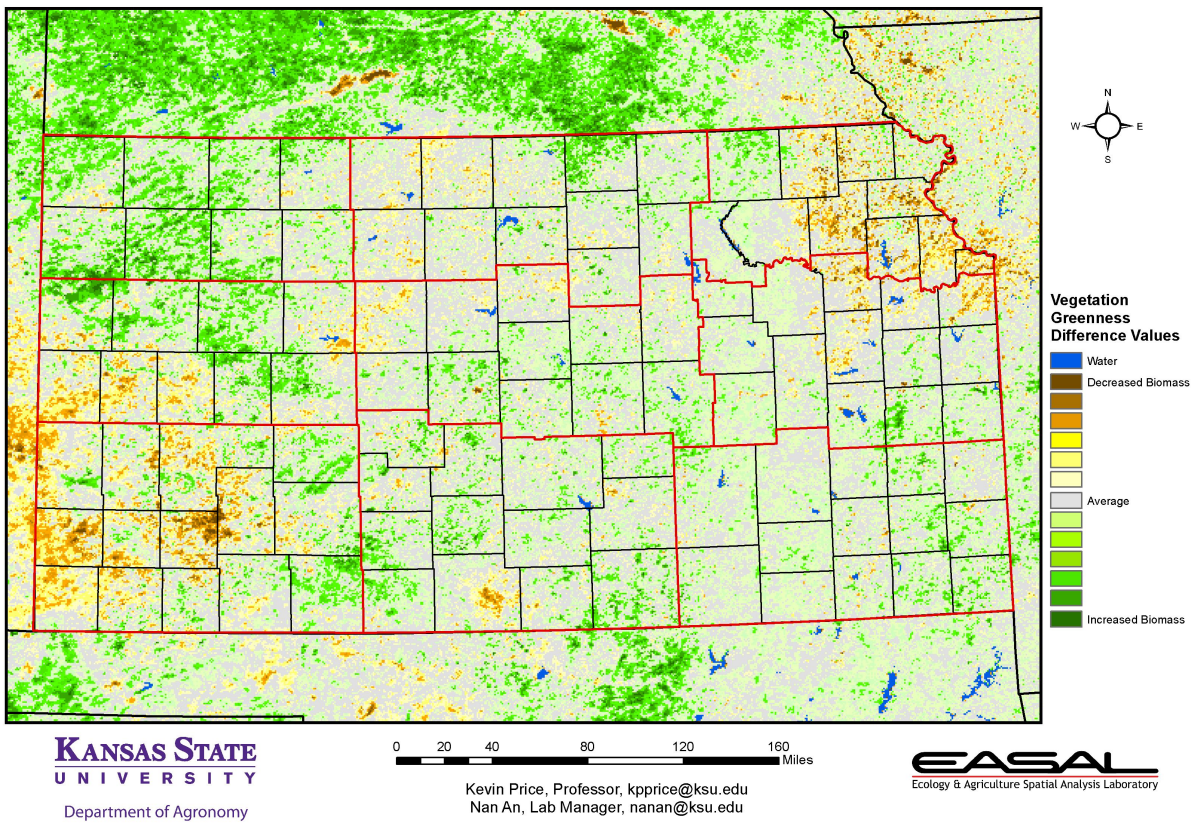


Figure 3. Compared to the 25-year average at this time for Kansas, this year's Vegetation Condition Report for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that northwest Kansas has the largest area of above-average biomass production. Timely rains, coupled with favorable temperatures, have benefitted vegetation in the region.

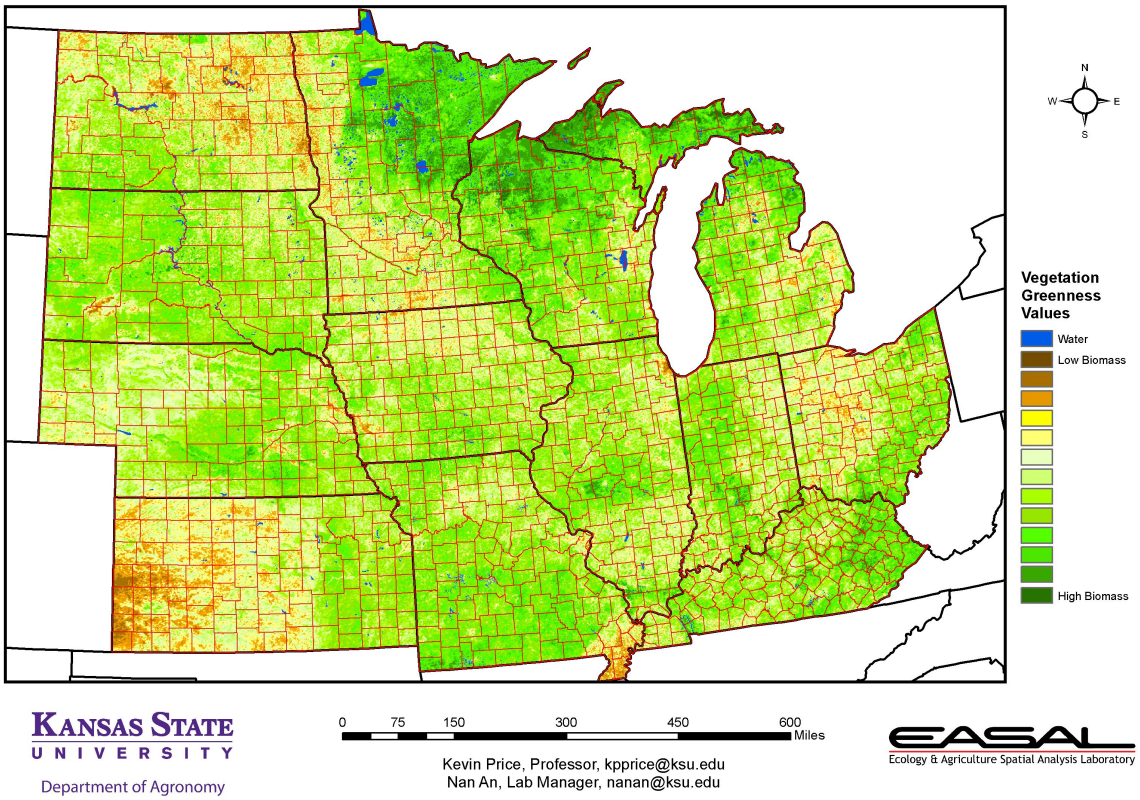


Figure 4. The Vegetation Condition Report for the Corn Belt for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the greatest area of high biomass production is in the area from northeastern Minnesota to the Upper Peninsula of Michigan. Photosynthetic activity is lower in eastern North Dakota through western Minnesota. Heavy rains continued to delay field work in these areas. In southwest Kansas, the continued drought has limited biomass production in.

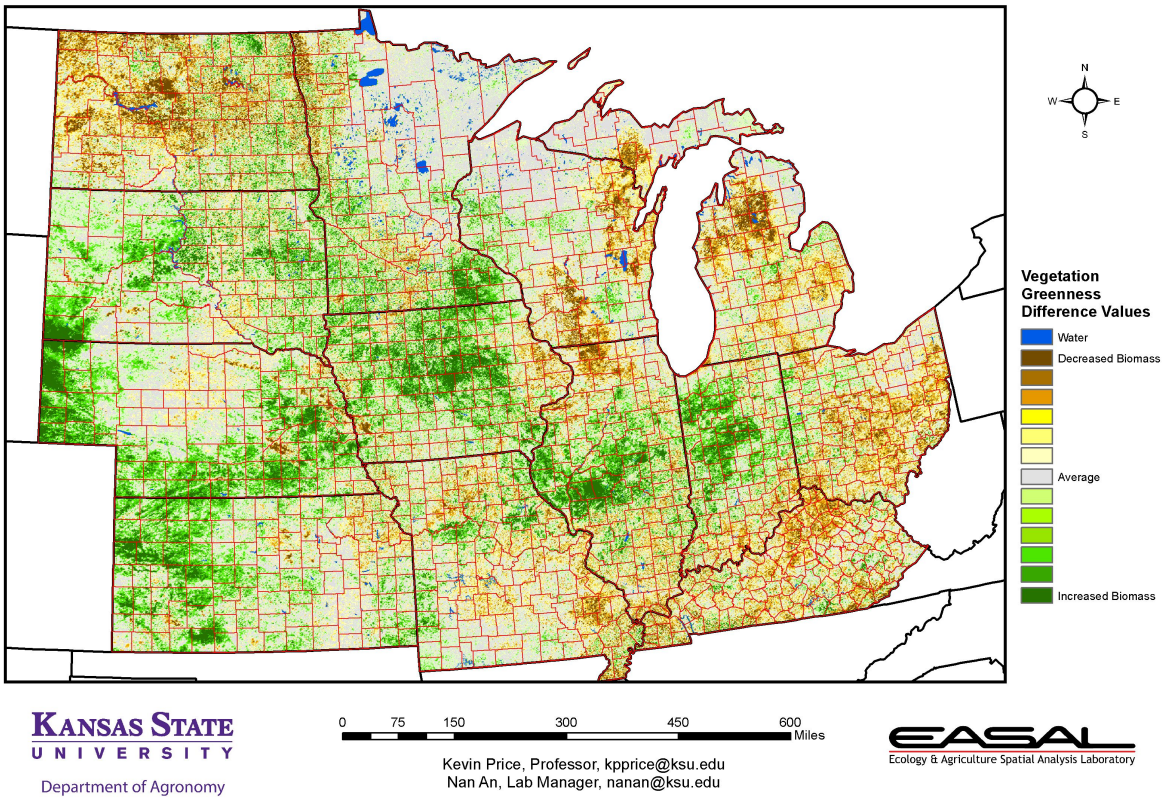


Figure 5. The comparison to last year in the Corn Belt for the period June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the central and western portions of the Corn Belt have the greatest increase in photosynthetic activity. Favorable rainfall coupled with favorable temperatures have accelerated photosynthetic activity in these areas.

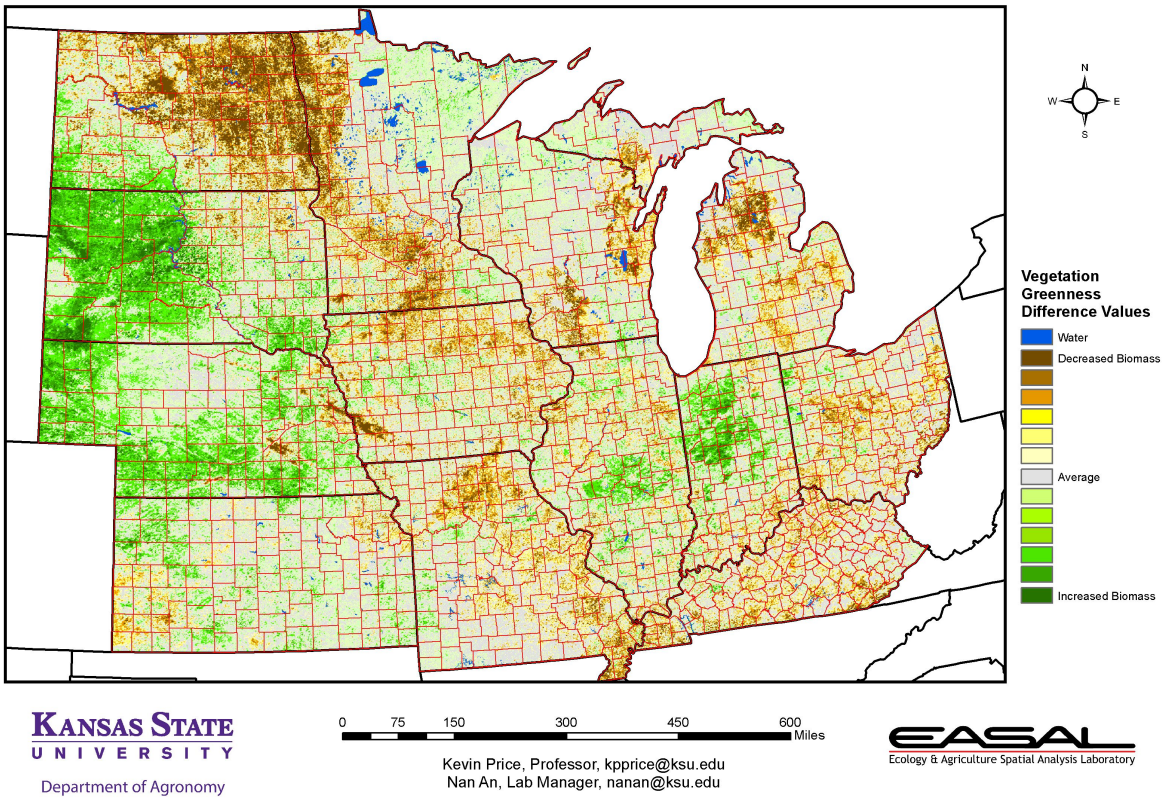


Figure 6. Compared to the 25-year average at this time for the Corn Belt, this year's Vegetation Condition Report for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that North Dakota has the largest area of below-average biomass production. Cool, wet weather continues to hamper field work. Topsoil moisture in North Dakota is rated 34 percent surplus and 64 percent adequate.

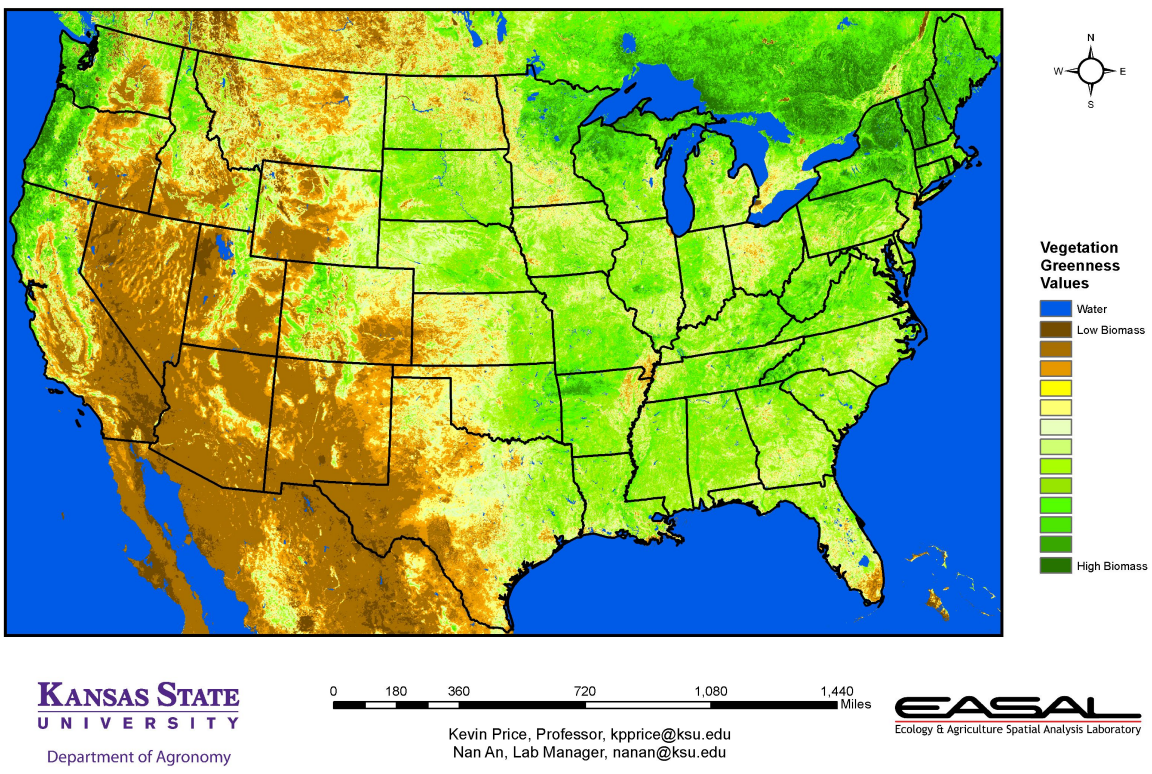


Figure 7. The Vegetation Condition Report for the U.S. for June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the highest NDVI values are in northern New England and along the Pacific Northwest. The Pennsylvania Crop Report indicates corn grew 10 inches in the last week.

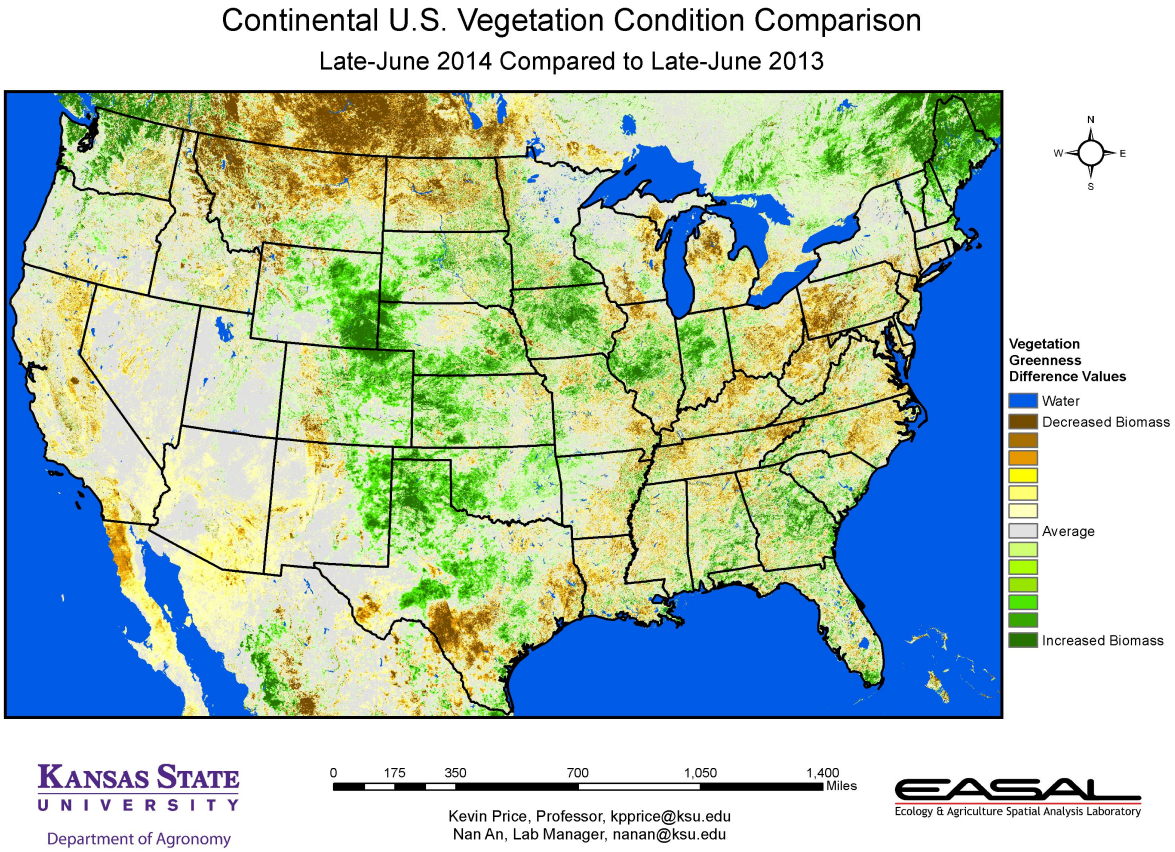


Figure 8. The U.S. comparison to last year at this time for the period June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the biggest area of increase is in the western High Plains. Eastern Wyoming is showing particularly high NDVI values compared to last year. The U.S. Drought Monitor shows this region to be drought-free now, whereas last year it was in moderate to extreme drought.

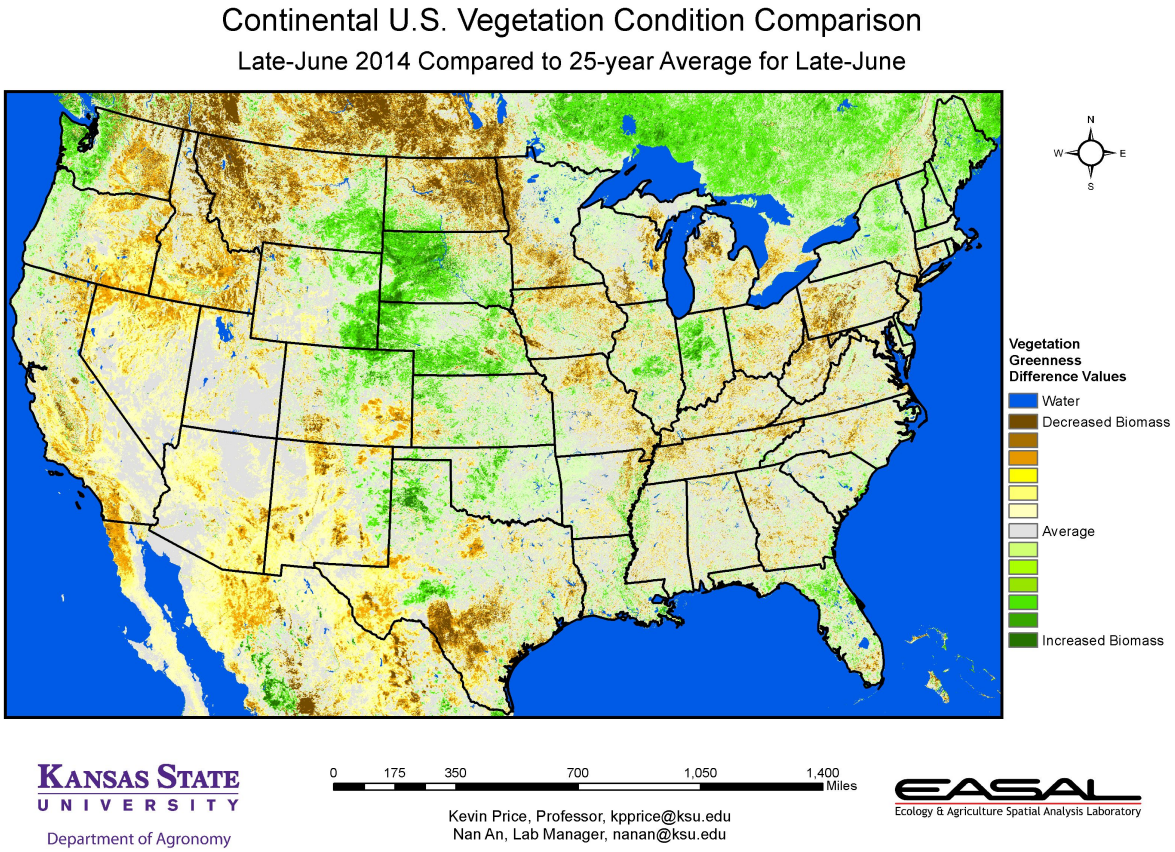


Figure 9. The U.S. comparison to the 25-year average for the period June 17 – 30 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that the Northern Plains has the biggest contrast. Along the border of Wyoming, South Dakota, and Nebraska photosynthetic activity is much higher than average. This region has seen the combination of favorable moisture and temperatures. In North Dakota, much lower-than-average NDVI values are present. This region has seen excessive moisture and cool temperatures.

Mary Knapp, Weather Data Library
mknapp@ksu.edu

Kevin Price, Professor Emeritus, Agronomy and Geography, Remote Sensing, GIS
kpprice@ksu.edu

NanAn, Graduate Research Assistant, Ecology & Agriculture Spatial Analysis Laboratory (EASAL)
nanan@ksu.edu