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Special Issue

Tillage Trends in Kansas

In 2010, a ground (driving) survey of tillage practices was conducted in 23 counties. The following analysis of Kansas' tillage trends compares the results of this survey with results from 2004.

In 2010, the driving transects in the tillage survey were completed by trained volunteers who drove a route through each of 23 counties, stopping to look at the tillage practices and crops grown on approximately 460 or more fields per county. Total acreage of four main crops (corn, soybeans, wheat, and sorghum) was obtained from the USDA Farm Services Agency.

Tillage practices vary somewhat from year to year depending on conditions. Some farmers will select practices because of the soil, water, and air quality benefits. We realize that tillage selection by producers is also a function of the crop rotation, residue levels, desired moisture levels at planting, previous year's weather, previous year's conditions at harvest (i.e., whether or not the field had a lot of ruts), and the weather at planting time (i.e., cool, wet soils might prevent a producer from doing planned tillage, cause the producer to direct seed).

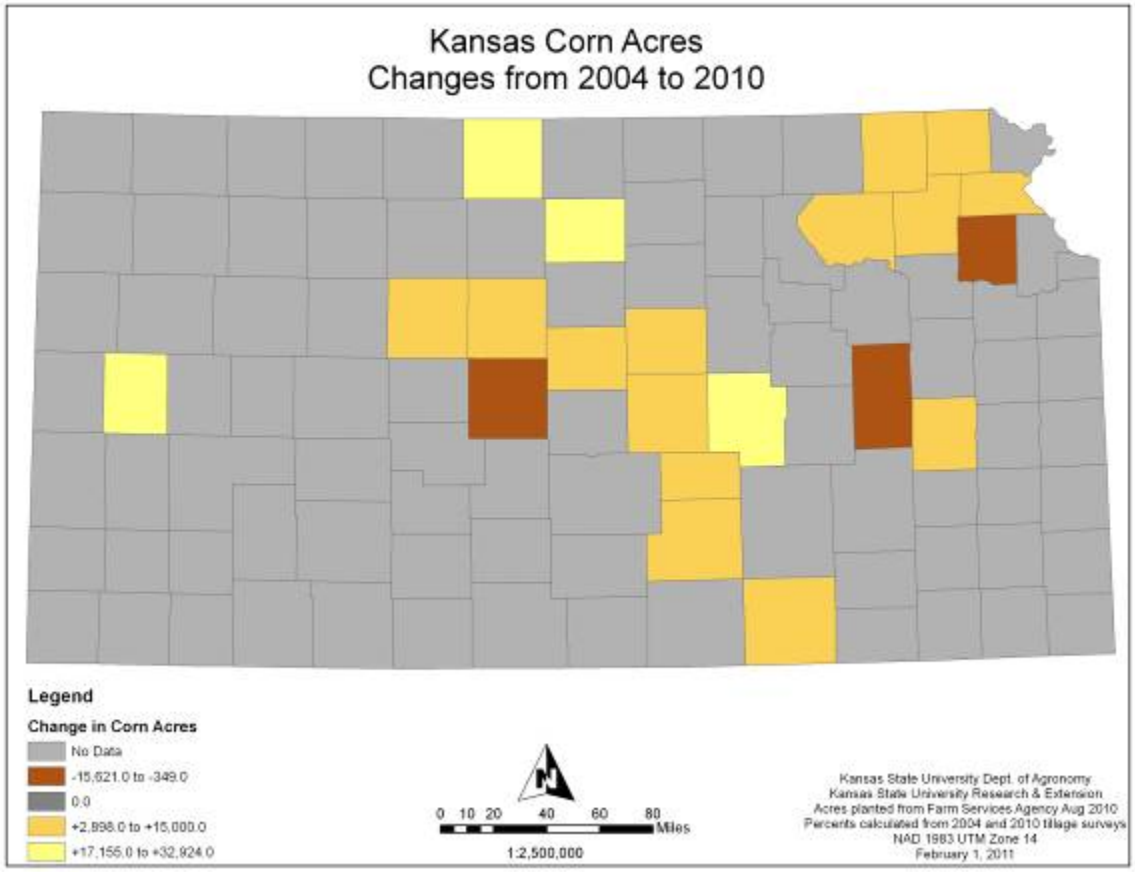
Another thing to keep in mind when looking at the 2010 findings is that our data set is not able to recognize continuous no-till. If a field was marked no-till, that only means it was planted no-till in 2010. If the survey were to be repeated each year using the same driving route, after a period of time it would be more reasonable to draw conclusions about the percentage of that county that might be continuous no-till. However, if you look at the complete data sets for each county, available online at: www.agronomy.ksu.edu/extension/tillage, you will notice some fields marked as continuous no-till. The volunteers who completed these driving transects were locals (usually Extension agents) and in some cases knew that particular fields were in continuous no-till, so they marked them as such.

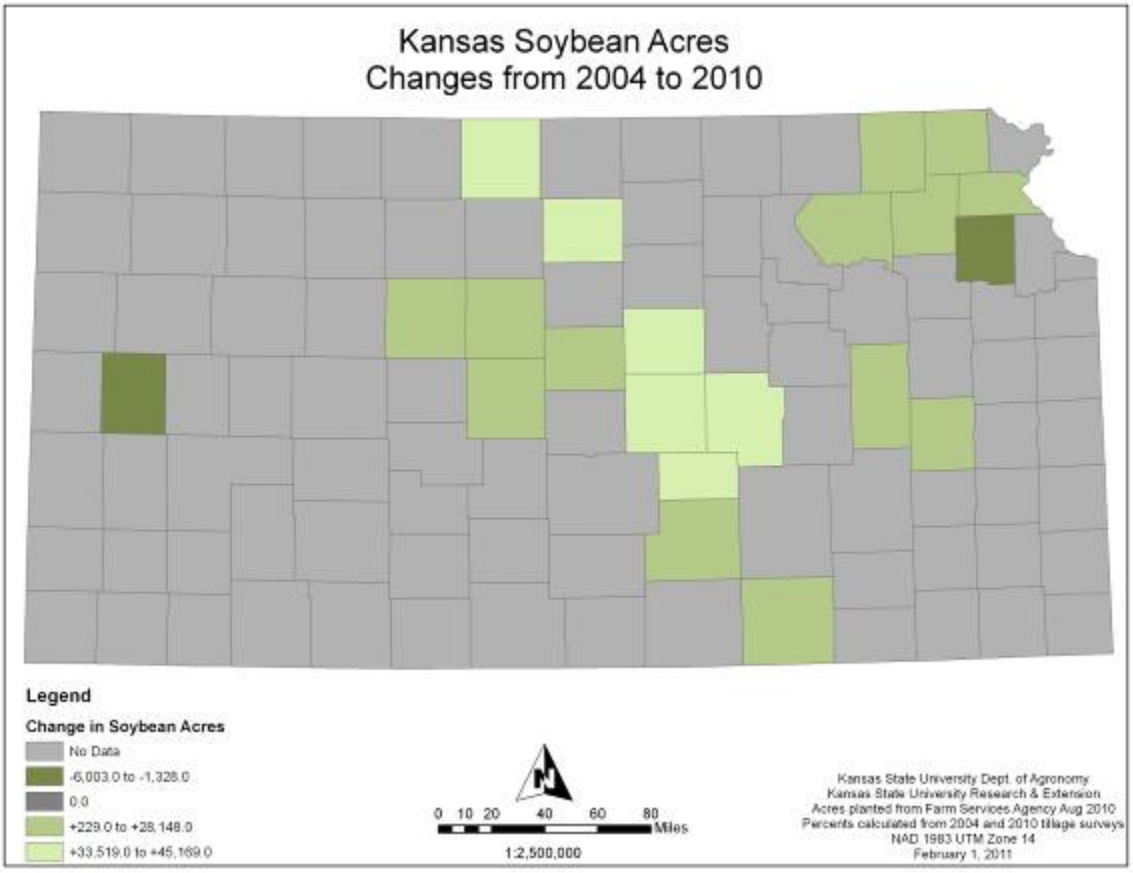
Finally, the maps included here do not display any data on strip-tillage, mulch tillage (including vertical tillage), or ridge tillage. A few fields of each were observed in many counties, but represented quite small fractions of the total. The complete data set for each county is available at: www.agronomy.ksu.edu/extension/tillage

You will see that the data is available in multiple formats, including PDF documents, Excel spreadsheets, and some formats that you can view if you have Google Earth installed on your computer.

Conclusions for cropping and tillage trends between 2004 and 2010:

1. Acreage of crops: When comparing 2004 and 2010, corn and soybeans acreages increased in 18-19 of the counties surveyed, while 2010 wheat and sorghum acres were down in 18 to 19 counties of the 23 surveyed.




Kansas Soybean Acres
Changes from 2004 to 2010
Legend
Change in Soybean Acres
No Data
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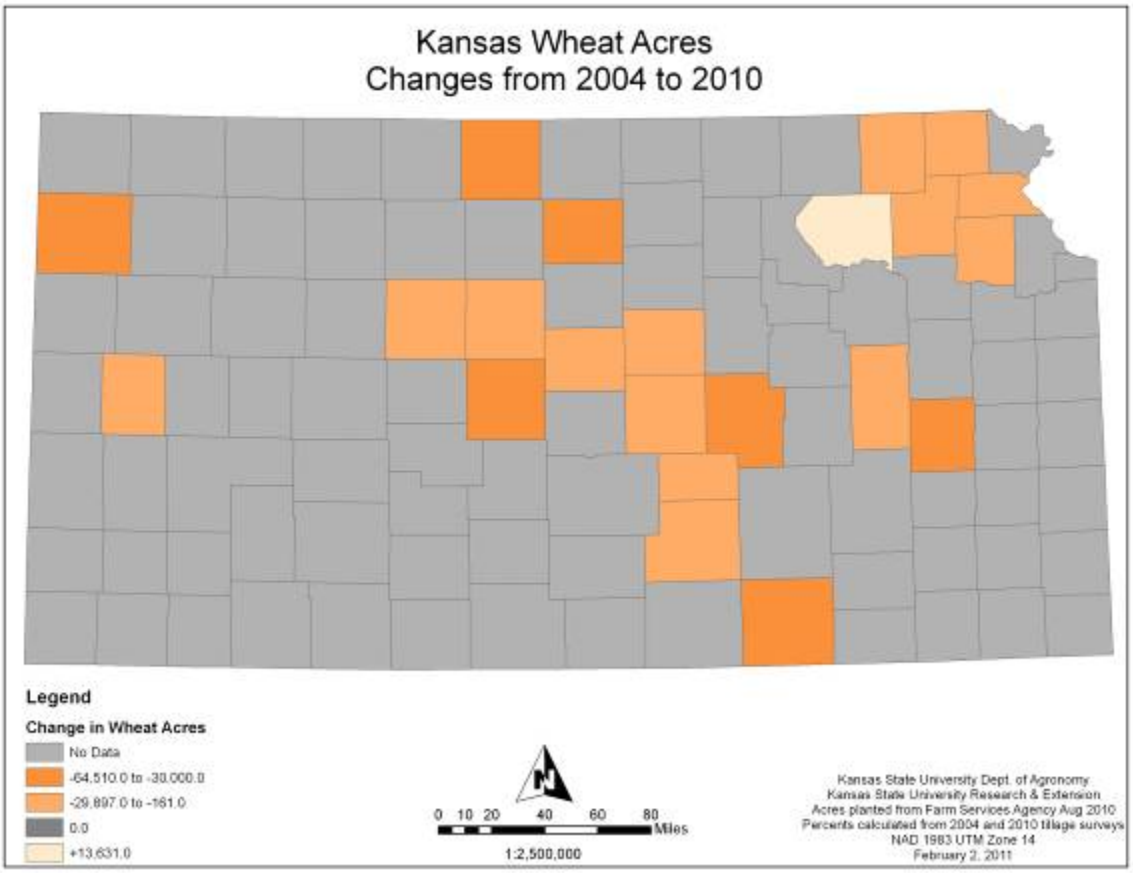
0.0
+229.0 to +28,148.0
+33,519.0 to +45,169.0
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
Percents calculated from 2004 and 2010 tillage surveys
NAD 1983 UTM Zone 14
February 1, 2011


Kansas Wheat Acres
Changes from 2004 to 2010
Legend
Change in Wheat Acres
No Data
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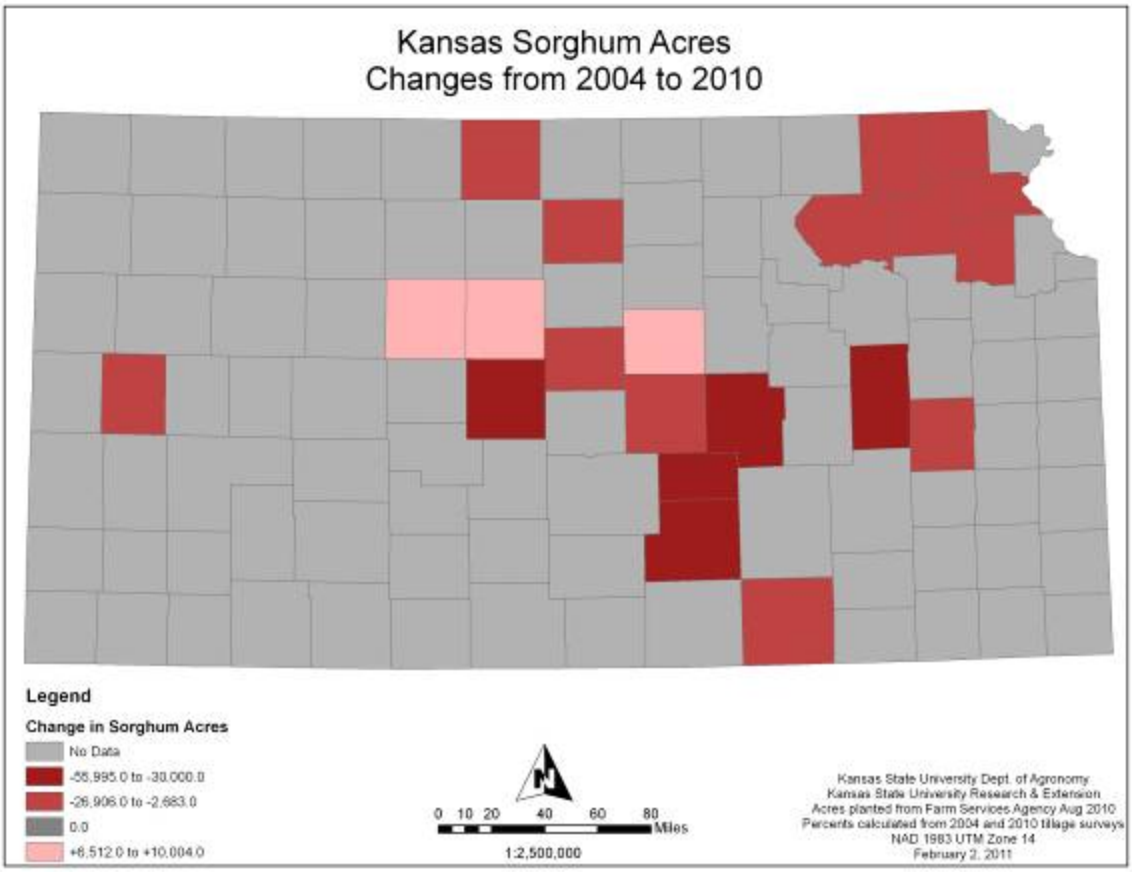
-29,897.0 to -161.0
0.0
+13,631.0
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
Percents calculated from 2004 and 2010 tillage surveys
NAD 1983 UTM Zone 14
February 2, 2011


Kansas Sorghum Acres
Changes from 2004 to 2010
Legend
Change in Sorghum Acres
No Data
-55,995.0 to -33,000.0
-26,906.0 to -2,683.0
0.0
+6,512.0 to +10,004.0
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
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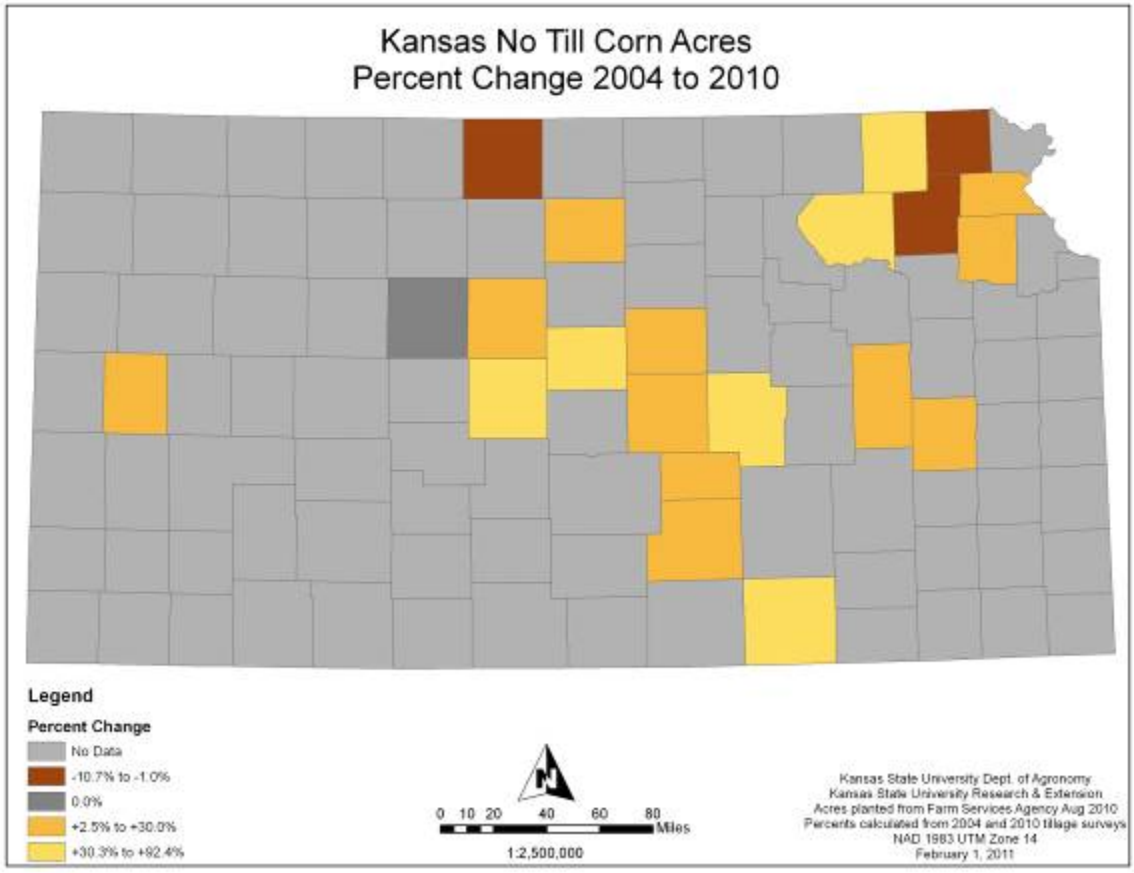
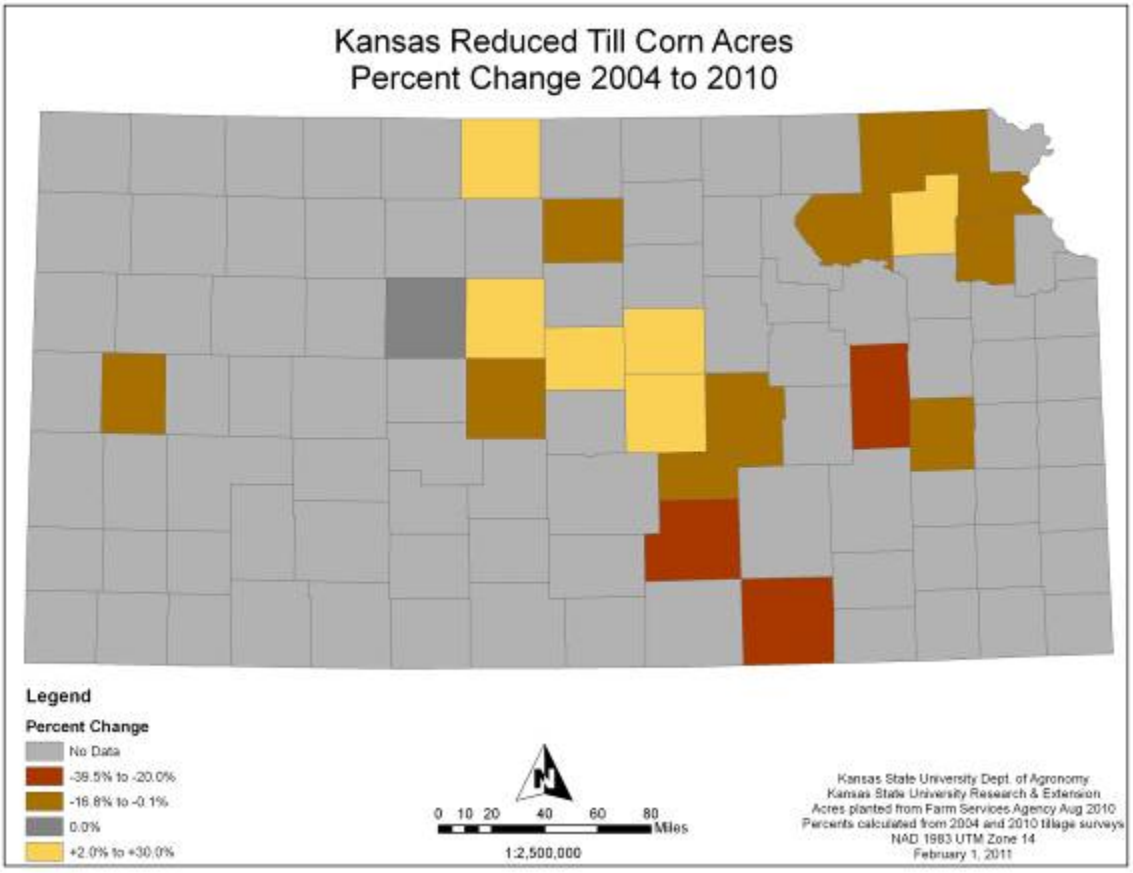
2. Corn tillage practices: Acres planted to no-till corn in 2010 were higher than 2004 in 17 of the 23 counties surveyed. Reduced tillage (15 to 30% residue after planting) declined in 14 of the surveyed counties, and conventional (<15% residue after planting) tillage acreage was lower in 10 of the counties surveyed.




Kansas Reduced Till Corn Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-39.5% to -20.0%
-16.8% to -0.1%
0.0%
+2.0% to +30.0%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
Percents calculated from 2004 and 2010 tillage surveys
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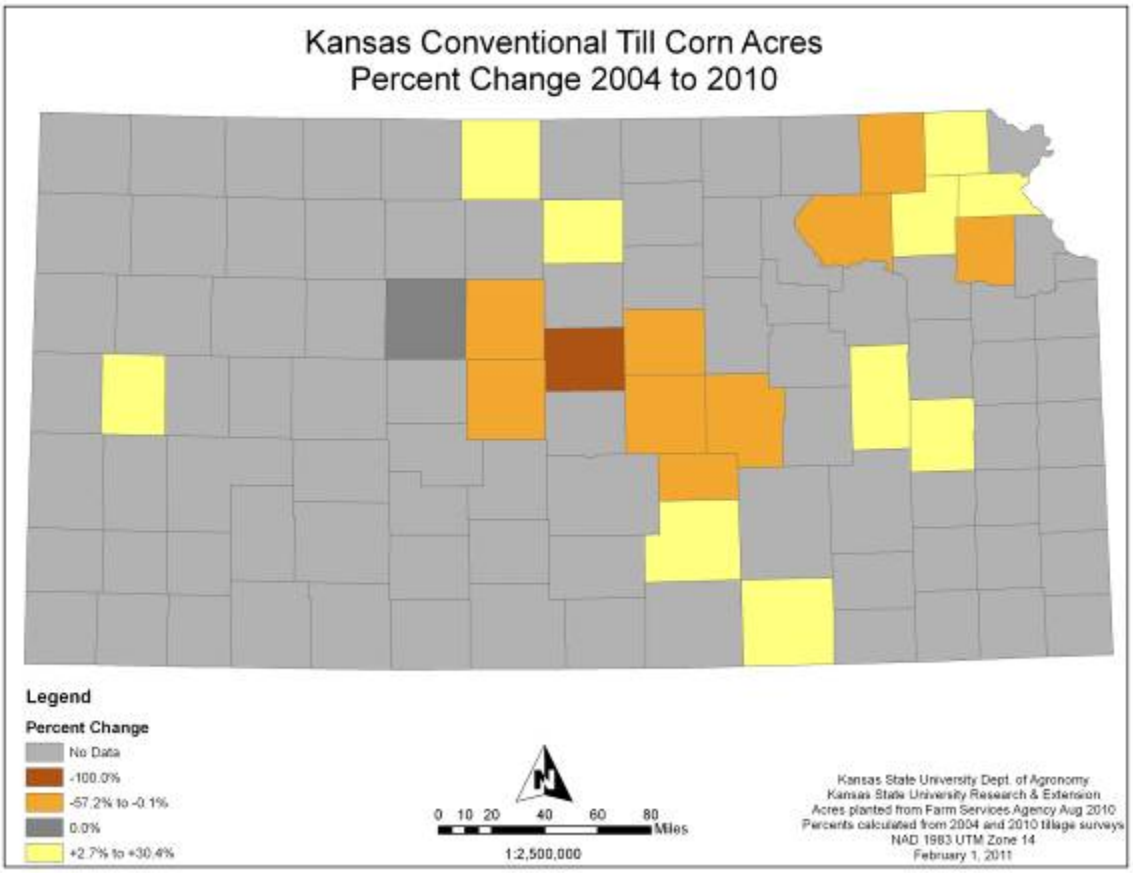
Kansas Conventional Till Corn Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-100.0%
-57.2% to -0.1%
0.0%
+2.7% to +30.4%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
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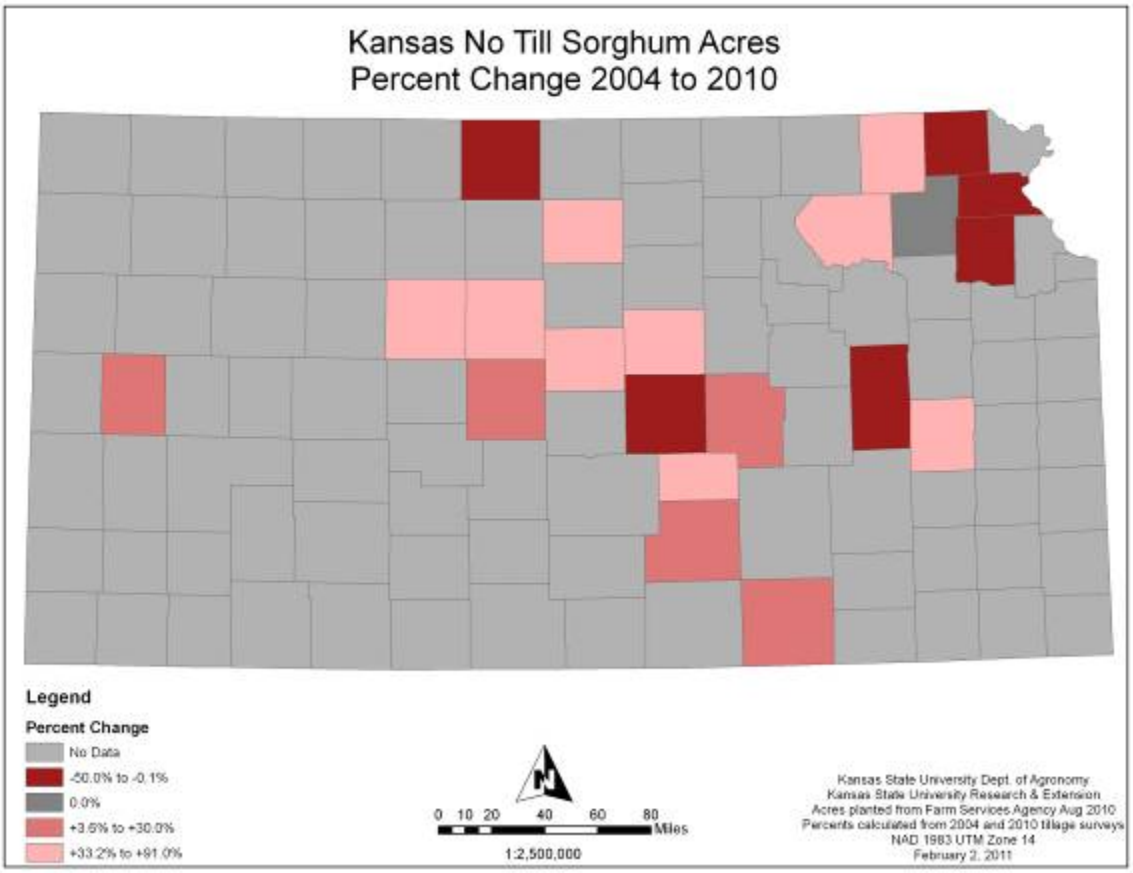
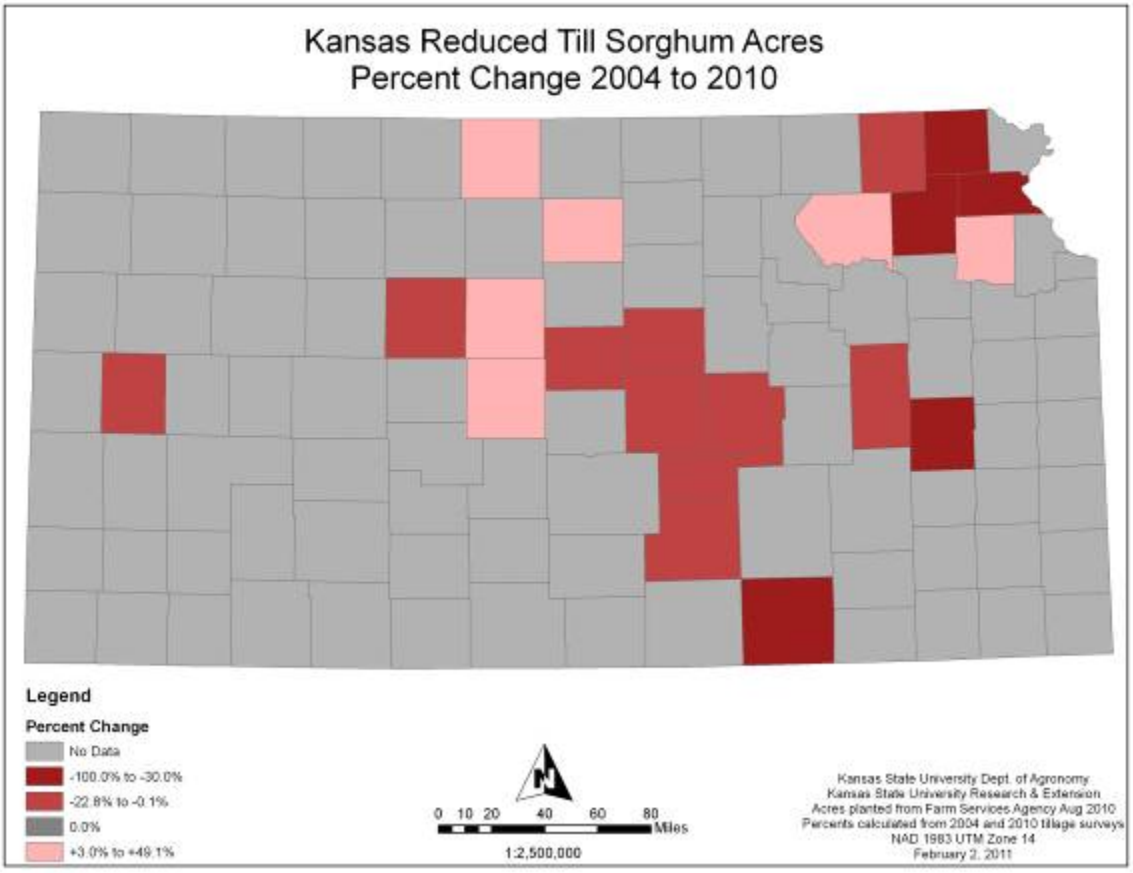
3. Sorghum tillage practices: No-till grain sorghum increased in 14 counties between 2004 and 2010. Reduced tillage decreased in 15 counties, and conventional tillage decreased in 11 counties during this time period.




Kansas Reduced Till Sorghum Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-100.0% to -30.0%
-22.8% to -0.1%
0.0%
+3.0% to +49.1%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
Percents calculated from 2004 and 2010 tillage surveys
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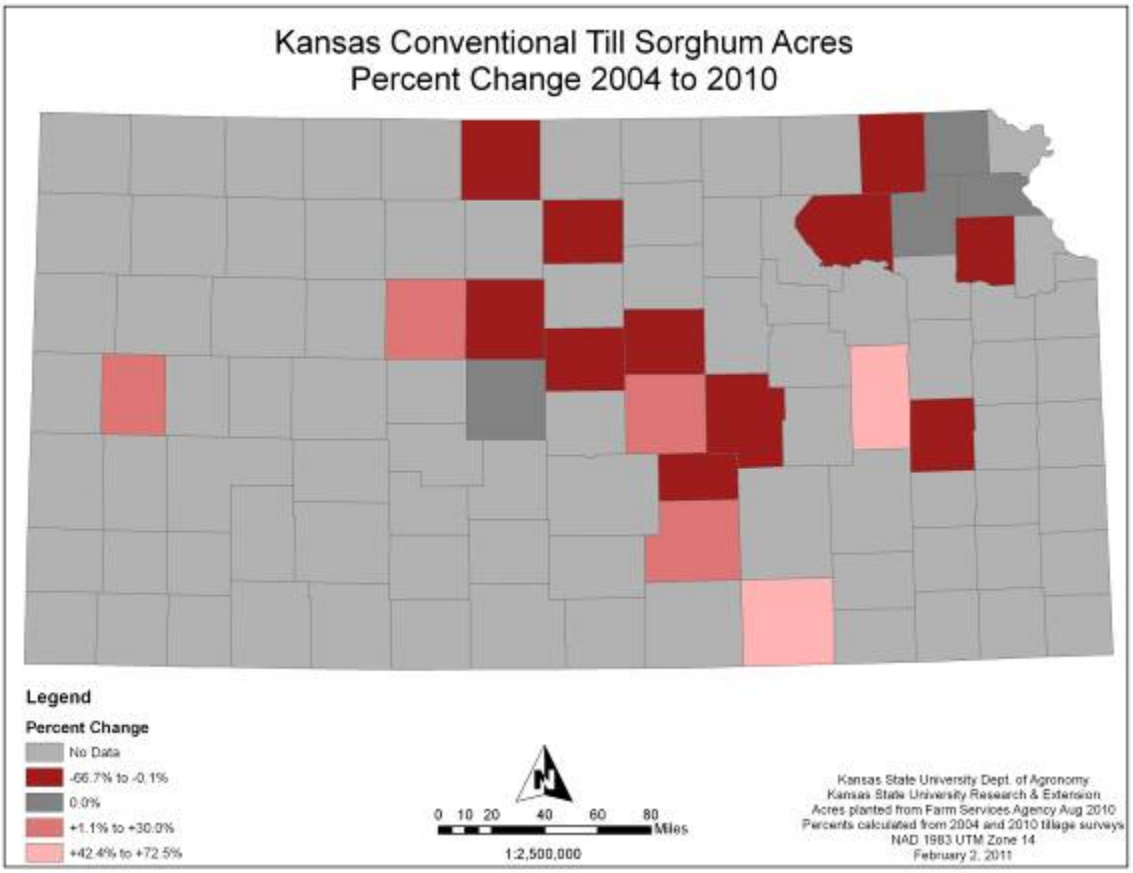
Kansas Conventional Till Sorghum Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-66.7% to -0.1%
0.0%
+1.1% to +30.0%
+42.4% to +72.5%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
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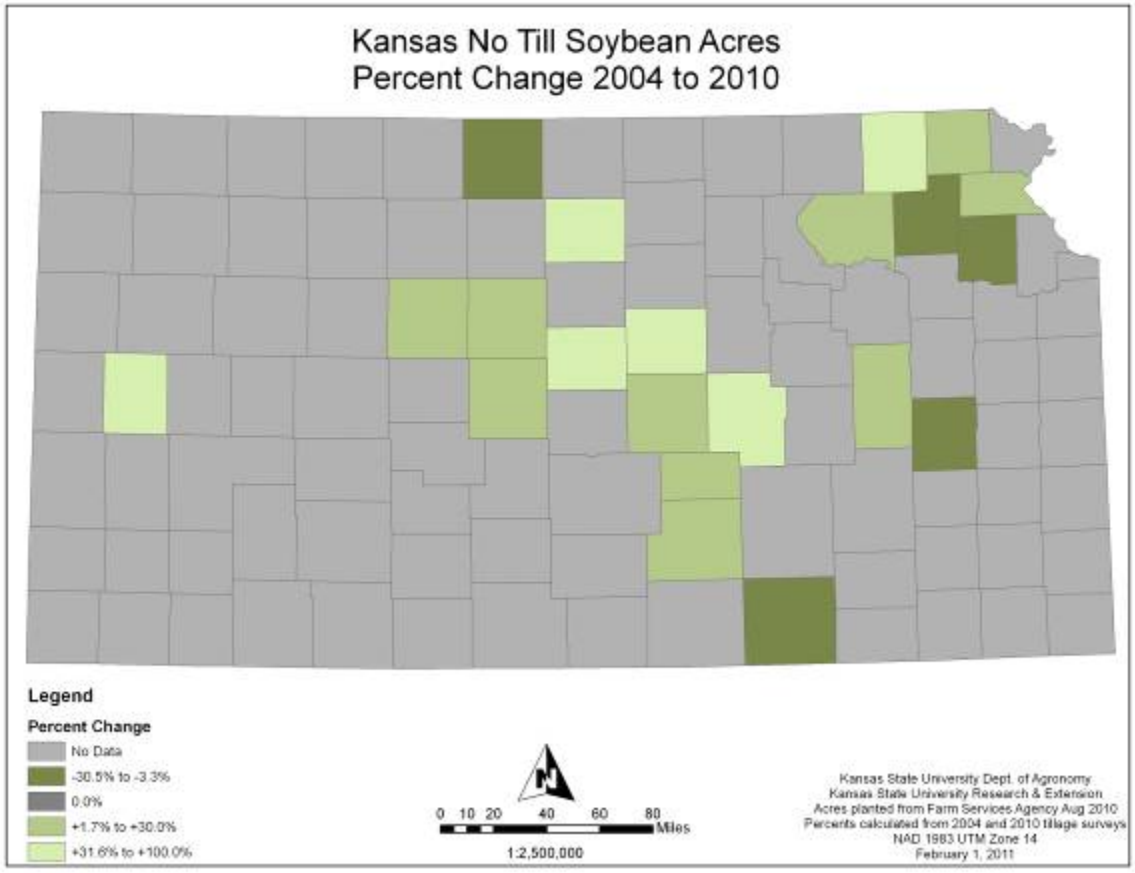
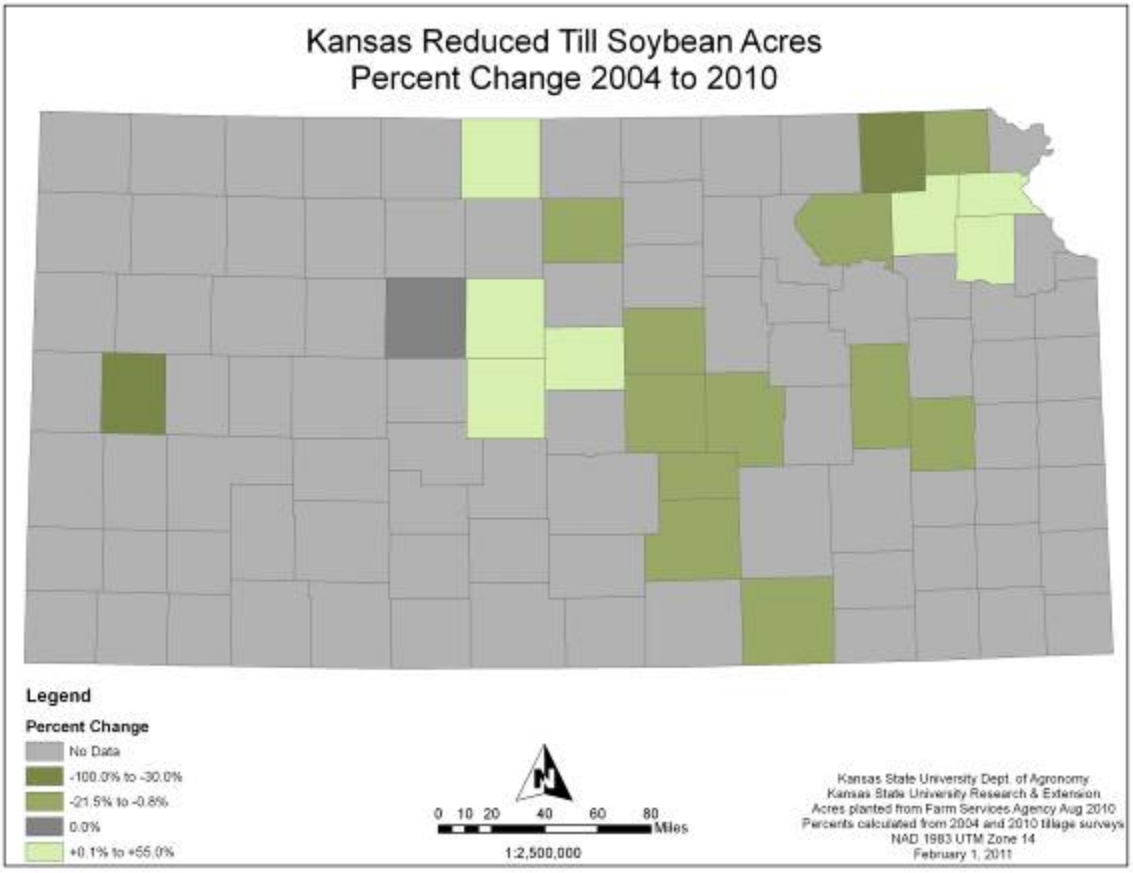
4. Soybean tillage practices: No-till planted soybeans increased in 16 of the 21 counties where soybean tillage practices were observed. Reduced and conventional tillage generally decreased, though some increases in conventional tillage in eastern and central Kansas were likely caused by a wet fall 2009 harvest that caused damage in the form of ruts in some fields.




Kansas Reduced Till Soybean Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-100.0% to -30.0%
-21.5% to -0.8%
0.0%
+0.1% to +55.0%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
Acres planted from Farm Services Agency Aug 2010
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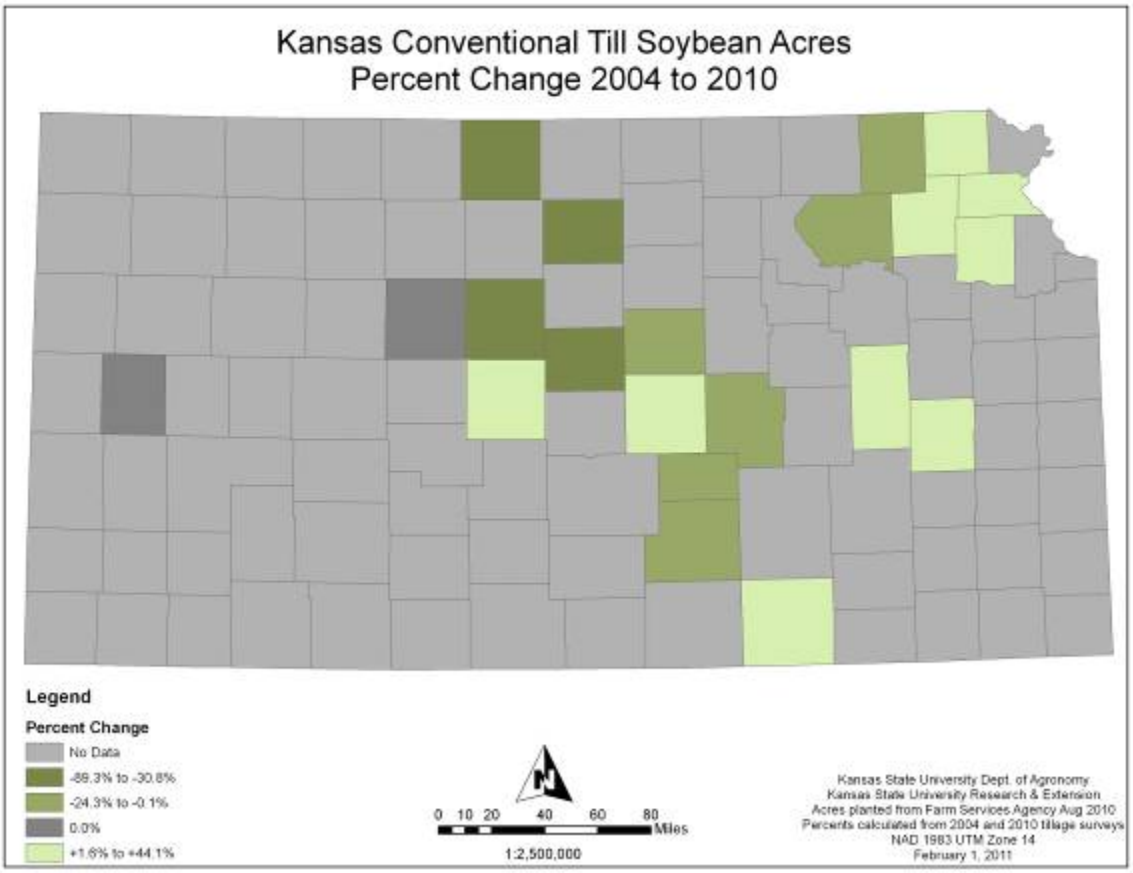
Kansas Conventional Till Soybean Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-89.3% to -30.8%
-24.3% to -0.1%
0.0%
+1.6% to +44.1%
0 10 20 40 60 80
Miles
1:2,500,000
Kansas State University Dept. of Agronomy
Kansas State University Research & Extension
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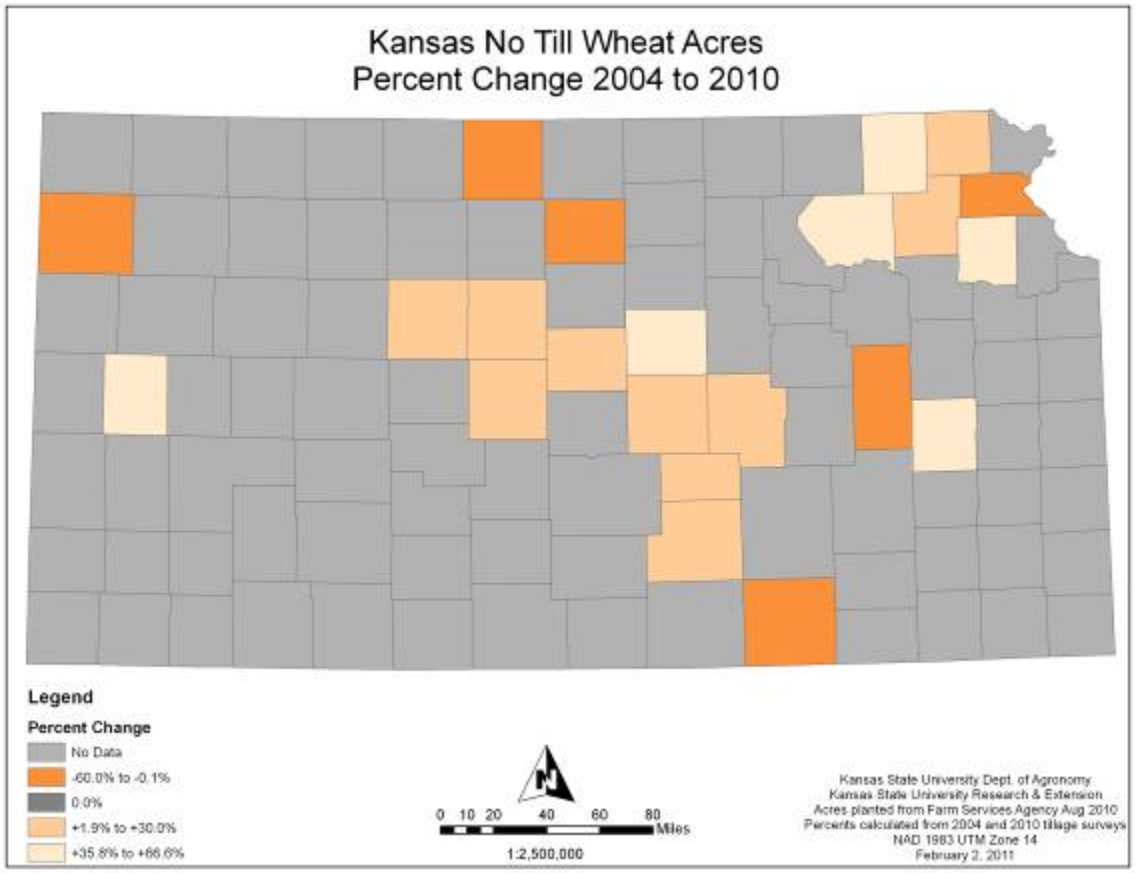
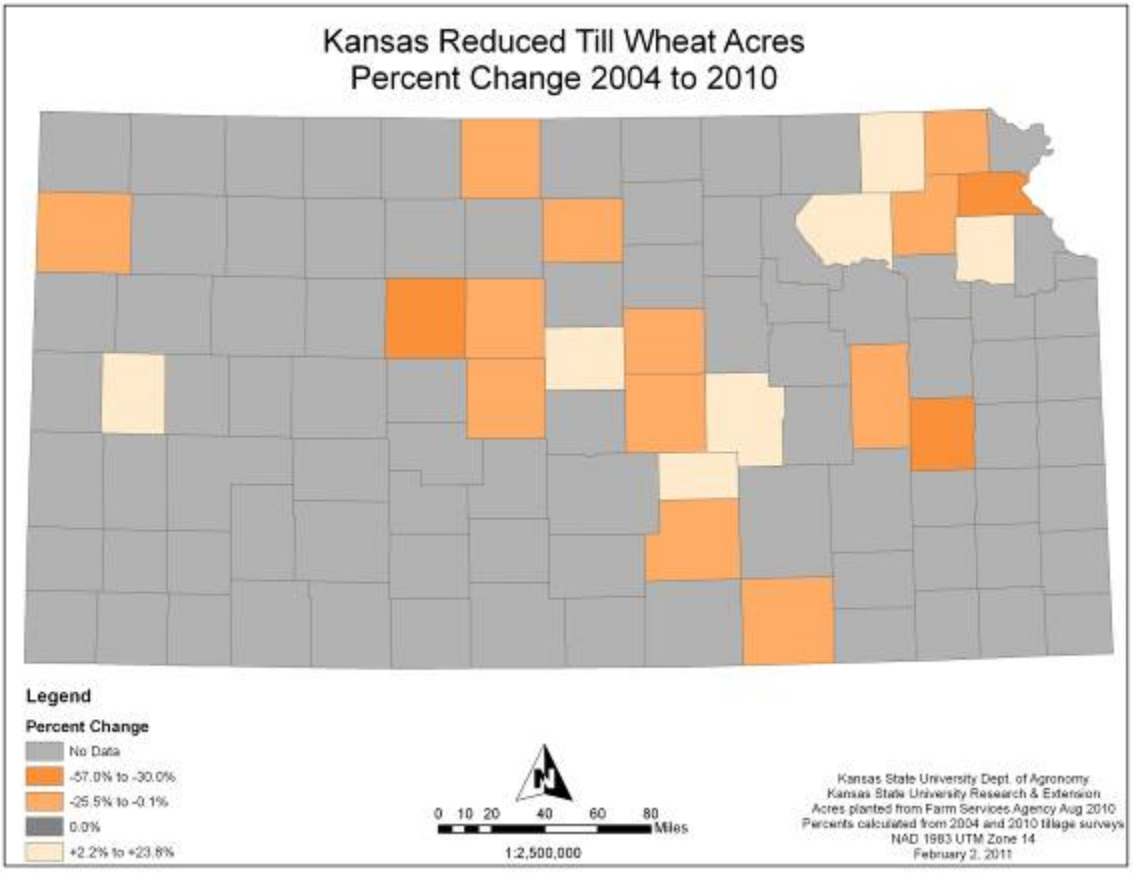
5. Wheat tillage practices: No-till increased in 16 of the 22 counties where wheat tillage practices were surveyed in the fall of 2009 (for the 2010 wheat harvest). Reduced-till wheat declined in 15 counties, and conventionally tilled wheat declined in 8 counties.




Kansas Reduced Till Wheat Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-57.0% to -30.0%
-25.5% to -0.1%
0.0%
+2.2% to +23.8%
0 10 20 40 60 80
Miles
1:2,500,000
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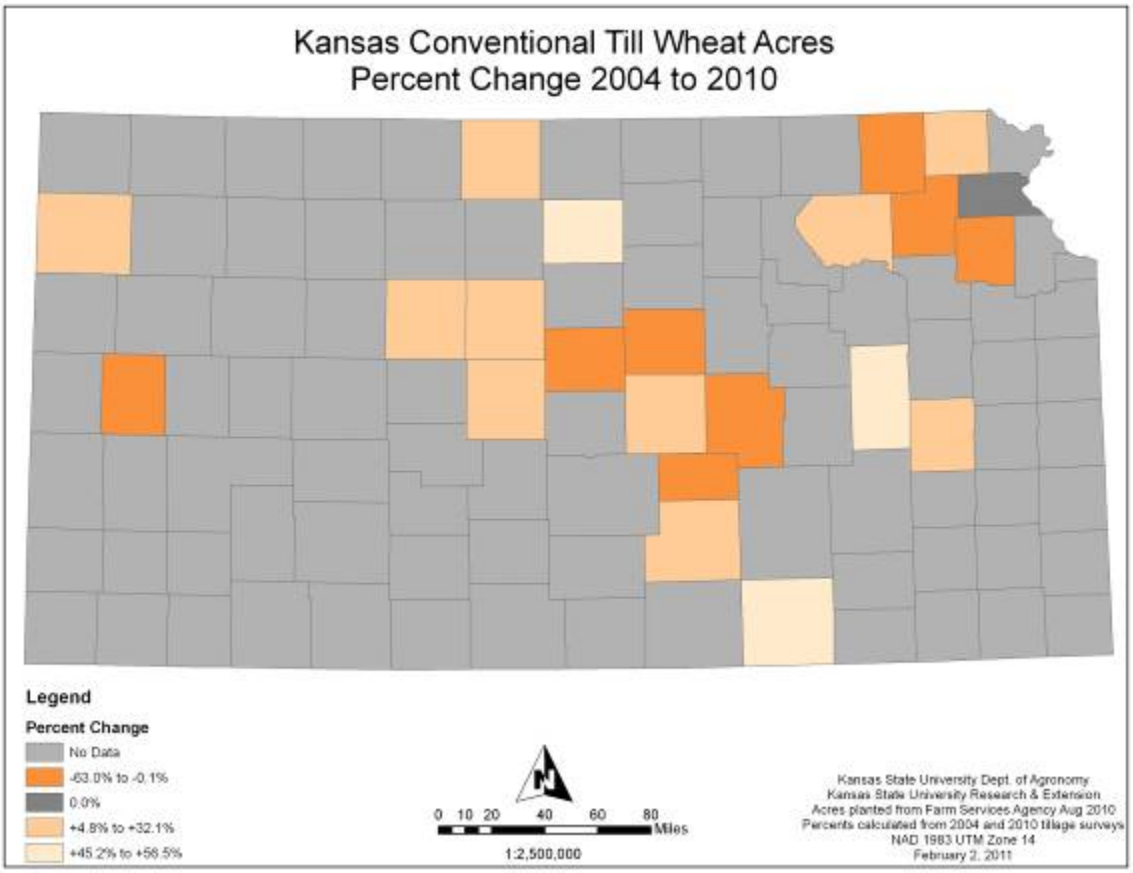
Kansas Conventional Till Wheat Acres
Percent Change 2004 to 2010
Legend
Percent Change
No Data
-63.0% to -0.1%
0.0%
+4.8% to +32.1%
+45.2% to +58.5%
0 10 20 40 60 80
Miles
1:2,500,000
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6. Overall, no-till increased in two-thirds of the counties when comparing 2004 and 2010 tillage practice data.

For more information, please contact me at the email address below.

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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, or Jim Shroyer, Research and Extension Crop Production Specialist and State Extension Agronomy Leader 785-532-0397 jshroyer@ksu.edu