Issue 1029

K-STATE Research and Extension

Extension Agronomy

eUpdate

11/14/2024

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate 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 Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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1. Learn how to examine soil for signs of compaction

Every year, questions arise about soil compaction. Now is a good time to get out and investigate soil profiles for signs of compaction. There is much you can learn by pushing a tile or soil probe into the ground. First, if you have never done so, you can learn something about the soil profile. How many inches of topsoil do you have? At what depth do you encounter changes in soil textures? Topsoil thickness and soil texture are two properties you can't really control, at least not in the short term. One thing you can certainly look for and work on improving, however, is whether there are any layers of compaction.

Using a spade, soil probe, or tile probe is a good way to learn something about your soil profile and whether there may be a compaction layer. One approach is to dig a small hole about a foot deep as if you were digging a post hole (Figure 1). You can take a knife and poke into the side of the hole, feeling for layers that seem denser or that visually have a platy, compressed soil structure (Figure 2). Use a tape measure to determine the depth at which the dense layers occur. Then, walk to a nearby fence row or waterway and do the same thing. Does this soil look and feel different? How does this compare to the end rows?

Figure 1. Digging a small hole with a spade is the best way to learn about the soil's natural and unnatural layers, such as compacted layers. Use a knife to feel for any unusually dense layers, and a tape measure to determine the depth of the layer. Photo by of DeAnn Presley, K-State Research and Extension.

Figure 2. Large pieces of soil that are horizontally oriented, or "platy," are a sign of compaction. **Photo by DeAnn Presley, K-State Research and Extension.**

Once you determine the depth at which the compaction occurs, you can work on solutions for improving (decreasing) the density of the compacted layer or the soil in general. If compaction seems limited to the upper 3 inches of the soil profile, then the most likely culprit is traffic. Limiting traffic as much as possible when the soil is wet is a good practice for reducing soil compaction (Figure 3). Running properly inflated tires, using floatation tires, and having more tires in general help to decrease surface compaction.

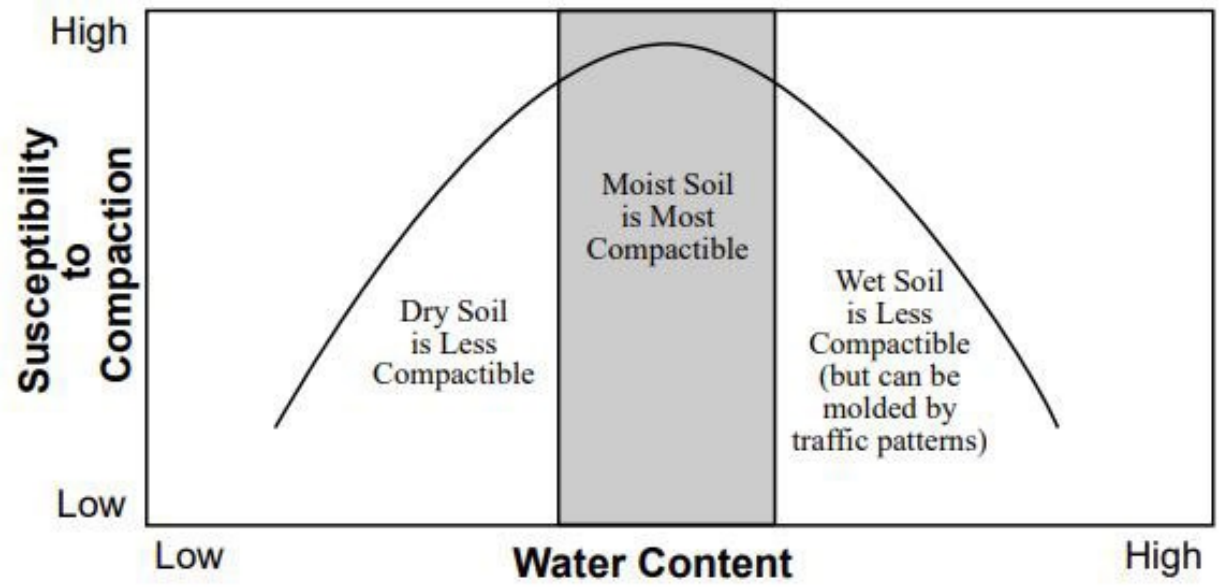

Figure 3. The amount of soil water is a critical factor in soil compaction potential. Moist soil is the most compactible. Graphic from K-State Research and Extension publication AF115.

A tougher problem to solve is subsurface compaction. If you can feel a layer that is compacted at depths greater than 6 inches, you may be dealing with subsurface compaction. Subsurface compaction should not be confused with a change in the soil texture. It is common to observe changes in the soil texture as you go deeper in the soil profile. Many soils have an increase in clay content in the upper part of the subsoil, which is natural and took a very long time to form. Some soils, such as those in floodplains, might have sandy layers present beneath the surface. This is the reason why the spade/post hole method is really the best, because it allows a person to discover so much more about the soil profile than using a tile probe alone.

A companion article in this eUpdate discusses the use of deep tillage for alleviating soil compaction.

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2. Post-harvest field work: Deep tillage considerations

Now that row crop harvest is over in Kansas, some farmers might consider performing deep tillage to alleviate compaction. A companion article in this eUpdate provides more information on assessing your soil for compaction zones. Here are a few things to consider:

How deep should the tillage operation occur?

That is best answered by taking a spade or soil probe out in your field and digging a few holes. Ideally, you should dig down to about 18 inches. You are looking for dense layers that restrict plant roots. If you see "platy" soil structure, which looks like many horizontal layers of soil about ¼ to ½ thick in diameter, look to see if the roots have penetrated through this zone in the soil. If the roots have predominantly penetrated this zone, the layer probably isn't really root-limiting. If you see a lot of roots that are growing horizontally, or if they appear stubby and gnarled, lacking many root hairs, that can also be a sign that the roots are having trouble making it through this layer.

If you see a dense zone that ends at around 8 inches, you'd only want to go about 9 inches deep with the tillage operation. As you double the depth of the tillage operation, you quadruple the power requirement, so going too deep is a waste of time and energy. Also, there is no point in going deeper and potentially damaging the soil profile even further (risks are explained below).

Will deep tillage benefit future crop yields?

In research studies, it is commonly concluded that deep tillage is only beneficial if the zone of compaction is truly root-limiting. If it isn't, deep tillage probably won't be of much benefit. The only way to really know is to leave about 3-5 untilled strips through your field and then compare the yields in those areas to the tilled parts of the field next year — easy enough to do if you have a yield monitor and you mark the locations of those untilled strips.

How long does the effect produced by deep tillage last?

Tillage can temporarily loosen soil, but because it breaks natural soil structure into smaller pieces, eventually, tilled soils re-compact and become denser with time. If the field is subsequently conventionally tilled, and particularly if the traffic is not controlled or limited to certain tire track paths, the benefit will only last a few years due to the many trips made across the field with various tillage and other implements. If the field is subsequently no-tilled and traffic is controlled, the effect of a single deep tillage operation might last longer.

Are there any negative side effects of deep tillage?

If tillage is performed when the soil is too wet, the compaction zone could be moved even deeper. To know if the soil is too wet for tillage, try to make a ribbon out of the soil without wetting it. If you can make a texture ribbon, it is too wet. Alternatively, if you can roll out a "snake" of soil by rubbing it between your palms, it's too wet. This is called "plasticity," and if the soil is plastic (bendable), it can smear and compact easily. You'll need your shovel or soil probe to test this to the entire depth that you want to till.

Your goal is to create fracture, so the soil has to be dry enough to shatter, not smear. To see if you're achieving this, dig between the shanks with a spade and see if the soil is loosened. If you bring up

huge clods, the soil isn't shattering, and it would be better to wait until it is drier. Straight shanks are going to cause the least amount of soil disturbance, as shown in the photos below.

Figure 1. (Top photo) This image was taken 6 weeks after tillage with a ripper designed for minimum surface disturbance as it has straight shanks. The spade could be easily pushed all the way into the soil. The area between the shanks was easy to dig, except in the end rows, where there was a lot of traffic from heavily loaded grain carts. (Bottom photo) This is the implement used in the field described above. Photos by DeAnn Presley, K-State Research and Extension.

Also, remember that certain field areas are probably more compacted than others. Compacted areas might not be ready for deep tillage at the same time as the rest of the field because compacted areas tend to stay wetter for longer. A case in point is a visit to an Ellis County producer's farm. Soil shattering was observed from deep tillage across the entire 30 inches between the shanks in the "average" part of the field, but in the end rows where the grain cart was driven, excavated clods were about one cubic foot in size, most likely because those more compacted areas of the field were wetter.

Is deep tillage economical?

Only if a root-limiting layer is really present, and even then, it's not an easy decision because this is a costly operation. Deep tillage requires a lot of power. Deep tillage is slow-going, and the implements are not very wide. As a result, deep tillage requires a lot of time, diesel fuel, and usually a few sheared bolts! Custom rates for tillage operations vary depending on many factors, including location, type of soil, tillage practice, size and shape of field, and the size of equipment. The 2024 custom rates for various types of tillage operations by district are available on the K-State AgManager website at https://www.agmanager.info/sites/default/files/pdf/2024_CustomRates_06-14-24.pdf.

How can you prevent compaction?

Deep compaction is caused by heavy axle loads. Research indicates that axle loads greater than 10 tons can cause compaction as deep as 12 to 18 inches, and many modern implements weigh well over 10 tons per axle. The only way to reduce axle weight is to decrease the load weight or add axles — axle load cannot be reduced by adding more or larger tires, unfortunately. Shifting to continuous no-till can help soils become more resistant to subsequent compaction, and long-term research conducted in the Great Plains shows that no-till is more resistant to compaction at wetter soil moisture levels (Figure 2).

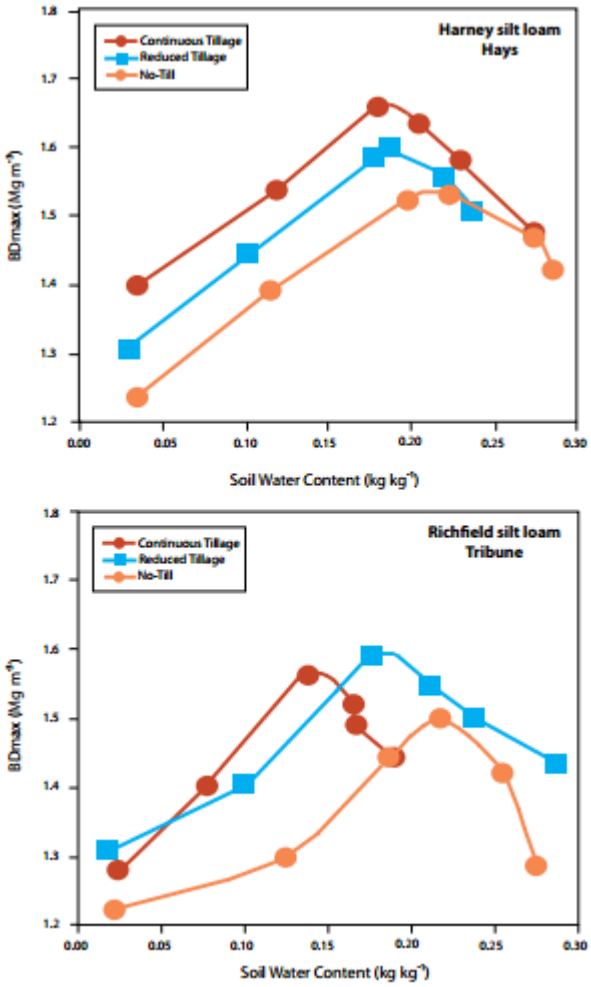

Figure 2. Tilled soils are more easily compacted than those under no-till. Also, no-tilled soils can better withstand machinery traffic at higher water contents compared to conventional and reduced-tilled soils; MF3066 Efficient Crop Water Use in Kansas https://www.bookstore.ksre.ksu.edu/pubs/MF3066.pdf (Source of original data: Blanco-Canqui, et al., 2009. No-till induced increase in organic carbon reduces maximum bulk density of soils. Soil Science Society of America Journal 73:1871-1879).

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3. Control of mustards in wheat - Timely treatment is important

Mustard plants such as field pennycress, bushy wallflower (treacle mustard), flixweed, tansy mustard, and blue mustard in wheat fields are often not noticed until the mustards bloom in the spring. As a result, farmers often do not think about control until that time. Although it is possible to get some control with spring herbicide applications, mustard control is much more effective before they have flowered. Earlier applications are also more effective in preventing wheat yield loss due to mustard interference (Figure 1).

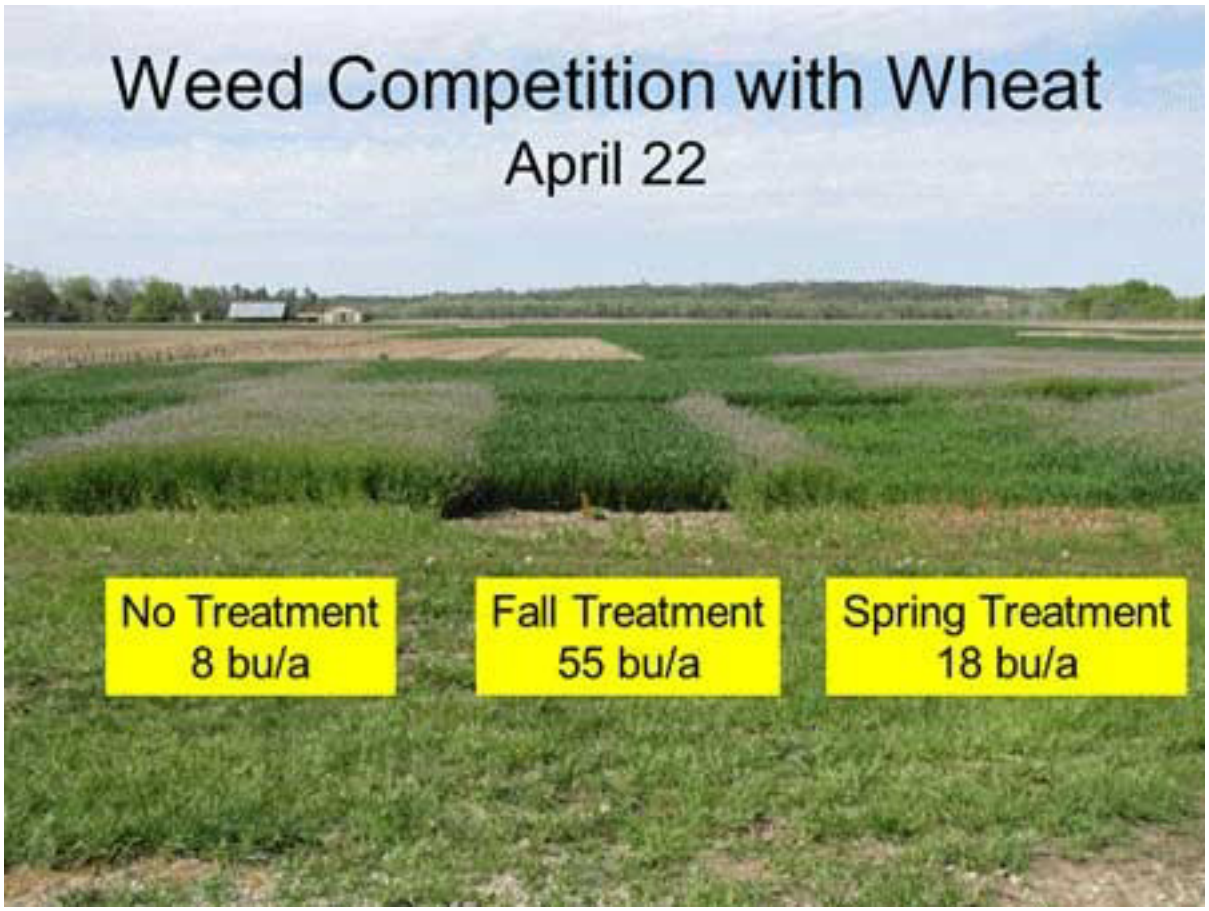

Figure 1. Effect of herbicide application timing on blue mustard control in wheat. Photos by Dallas Peterson, K-State Research and Extension.

Herbicide options

To minimize yield losses, mustards should be controlled by late winter or very early spring before the stems begin to elongate or bolt. If mustards are present in the fall, they can be controlled by various active ingredients. Look for products containing Group 2 herbicides such as chlorsulfuron (Glean, others), metsulfuron (Ally, others), triasulfuron (Amber, others), propoxycarbazone (Olympus, others), or pyroxsulam (PowerFlex, others), and premixes of thifensulfuron plus tribenuron (Affinity and

others). Most ALS-inhibiting herbicides control winter annual mustards very well. However, there are populations of bushy wall flower and flixweed in Kansas that are ALS-resistant and cannot be controlled by these products. Alternative herbicides will be needed to control these populations. Also, be aware that some Group 2 herbicides have long rotation intervals for other crops.

Group 27 herbicides like Huskie (pyrasulfotole) or Talinor (bicyclopyrone) can control ALS-resistant mustards. Other options to control ALS-resistant mustards are Group 4 herbicides like 2,4-D and MCPA. Dicamba and fluroxypyr (Starane, others) are not very effective for mustard control. Quelex (halauxifen plus florasulam) and Tarzec (halauxifen plus pyroxsulam) are also labeled for control of some mustard species.

Group 27 and Group 4 herbicides have little to no residual activity; thus, they will only control emerging and growing weeds. Applying them with fertilizer in January or February when weeds are dormant will not provide good mustard control. In addition, special care should be taken to ensure wheat is fully tillered when 2,4-D is applied to avoid reducing tillering.

For additional information about these herbicides, see the "2024 Chemical Weed Control for Field Crops, Pastures, and Noncropland" guide, K-State publication SRP-1183 or check with your local K-State Research and Extension office for a paper copy.

Application timing for troublesome species

In the late winter or early spring, blue mustard is perhaps the most difficult of the winter annual broadleaf weeds to control because it bolts very early. To be effective on blue mustard, herbicides typically need to be applied in late February or early March. Blue mustard is more difficult to control than tansy mustard with 2,4-D because blue mustard has often already bolted by the time 2,4-D can be safely applied to wheat. Thus, 2,4-D is often applied too late to be effective on blue mustard.

Flixweed and tansy mustard should be treated when they are no larger than two to three inches across and two to three inches tall. As these plants become larger, control decreases dramatically. Ester formulations of 2,4-D and MCPA are more effective on tansy mustard and flixweed than amine formulations. Field pennycress is easier to control than tansy mustard or flixweed. Herbicide applications made before the pennycress bolts are usually effective.

For help in identifying the different mustard species, please see the article "World of Weeds: Mustard species" in the eUpdate archive at https://eupdate.agronomy.ksu.edu/article/world-of-weeds-mustard-species-485-3.

Non-chemical methods

Crop rotation with corn, grain sorghum, soybeans, cotton, or sunflowers is a good way of managing mustards as long as they are controlled in the spring before producing seeds. Crop rotation will usually result in a gradual reduction of mustard populations in the future as the seed bank in the soil decreases.

Prevention is also a helpful strategy for the long-term management of mustards. Managing mustards in roadsides and field borders can prevent movement into cultivated fields. Also, cleaning equipment when moving from infested to non-infested fields reduces mustard dispersal.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.

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4. Fall weather summary and winter outlook for Kansas

September and October weather

The first two months of meteorological fall, September and October, have been unseasonably warm. Temperatures for this two-month period in Kansas averaged over 4 degrees above normal, making this the 7th warmest September-October period on record (Fig. 1), dating back to 1895. All nine Kansas climate divisions are experiencing a top 10 warmest fall so far, led by northwest Kansas, where fall 2024 ranks as 2nd warmest, behind only 1963. Goodland finished this period just one-tenth of a degree behind the warmest September-October period on record there, set back in 1938. Their 2-month average temperature of 65.0° was 6.4° above normal. After a brief cold snap in mid-October that brought a first freeze to most of the state, several locations in eastern Kansas have yet to fall below freezing again. Some locations, such as Coffeyville and Girard, still await their first freeze in the southeast. As we approach mid-November, average morning lows have decreased to near freezing in many areas, making the lack of a second freeze even more unusual. Temperatures so far in November are a continuation of mild conditions; through November 13th, the average temperature in the state is running 4.0° above normal.

September and October were also quite dry across the state. The average precipitation across the state for the two months combined was 2.50", or 2.34" below normal. This ranks as the 9th driest September and October combined in 130 years of weather records. A few locations picked up an inch or less of precipitation during this period, including Russell Springs (0.54"), Goodland (0.70"), Russell (0.84"), Colby (0.87"), and Scott City (0.97").

November starts with rain and warm temperatures

After an extended period of dry conditions across the state, November has started out very wet, thanks to multiple rounds of heavy rain (Fig. 2). With about half of the month remaining, total precipitation amounts are already high enough to not only ensure a wetter than normal November by month's end, but also to guarantee a top-10 wettest November in many locations across the state, particularly in western and southern Kansas (Table 1). A couple of locations have already set the record for the wettest November. Goodland's total of 3.16" beat the previous record of 2.63" for the month set in 1946. Cimarron, in Gray County, has received 3.66" of precipitation so far this month, exceeding the old mark of 3.23" set in 1928. In parts of southeast Kansas, while not the wettest on record, some totals for the month so far are already above 6 inches. The cooperative observer in Chautauqua has already measured 9.20" so far this month, the highest of any reporting site in the state. Other extreme totals include 8.60" in Butler County (El Dorado 7.9 NNW), 8.36" in Montgomery County (Coffeyville 0.8 ESE), 8.34" in Chase County (Wonsevu) and 8.13" in Wilson County (Neodesha 3 NE). Kansas' current record for wettest November is 13.03" set in the town of Lebo in Coffey County back in 1928. But Chautauqua's current total is the highest November total anywhere in the state since 1998.

As of November 13, the average statewide precipitation is estimated at 3.77", which, if it were the average precipitation for the entire month, would rank November 2024 as the 5th wettest in 130 years of record-keeping. But there is still about half the month left to go; there is still plenty of time for totals to increase if more precipitation falls before month's end. The record for wettest November is 4.68" in 1909, less than an inch above the current estimate. What do the latest outlooks call for in the coming weeks and for winter, which for meteorological purposes begins in just over two weeks on December 1? Could this be a very wet winter?

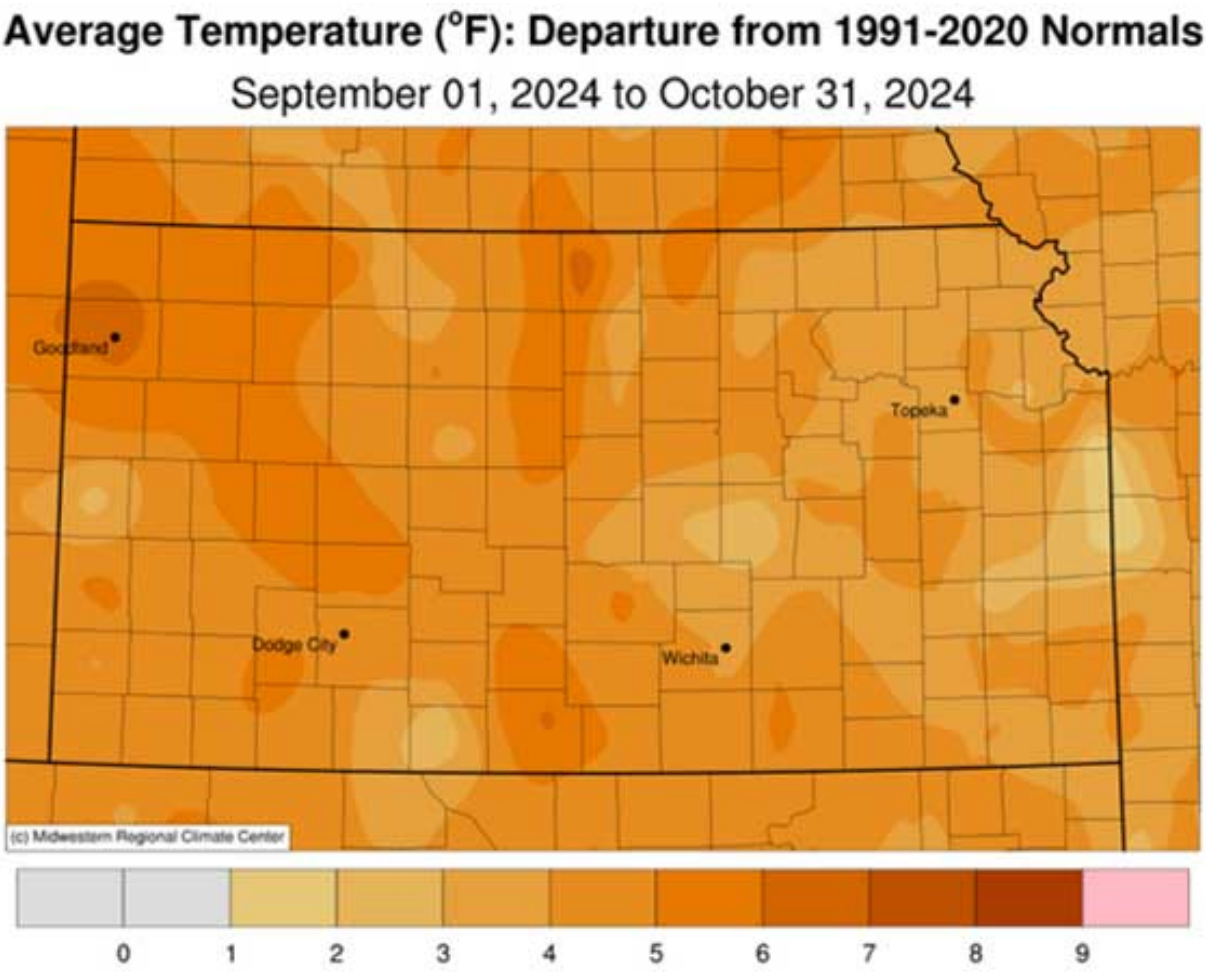


Figure 1: September-October 2024's average temperature. Source: Midwest Regional Climate Center.

Table 1. Precipitation totals for November 1-13, 2024, for select locations across Kansas, along with comparisons to normal and record monthly precipitation.

Location	County	Precip. Totals Nov. 1-13	Normal Nov. Precip.	2024 Rank Wettest Nov. (#years of record)	Record Wettest Nov. (Year)
Cimarron	Gray	3.66″	0.67″	1 (113)	3.66″ (2024)
Goodland	Sherman	3.16″	0.54″	1 (117)	3.16″ (2024)
Coldwater	Comanche	4.55″	0.95″	2 (120)	7.74″ (1909)
Dodge City	Ford	4.07″	0.80″	2 (151)	5.81″ (1909)
Greensburg	Kiowa	5.01″	0.96″	2 (114)	7.80″ (1909)
Fredonia	Wilson	9.01″	2.31″	2 (117)	10.31″ (1931)
Sedan	Chautauqua	9.05″	2.15″	3 (129)	11.19″ (1931)
Wellington	Sumner	5.61″	1.78″	3 (111)	10.74″ (1964)
Ulysses	Grant	2.86″	0.49″	4 (124)	3.89″ (1971)

Wichita	Sedgwick	5.78"	1.36"	4 (137)	6.69" (1909)

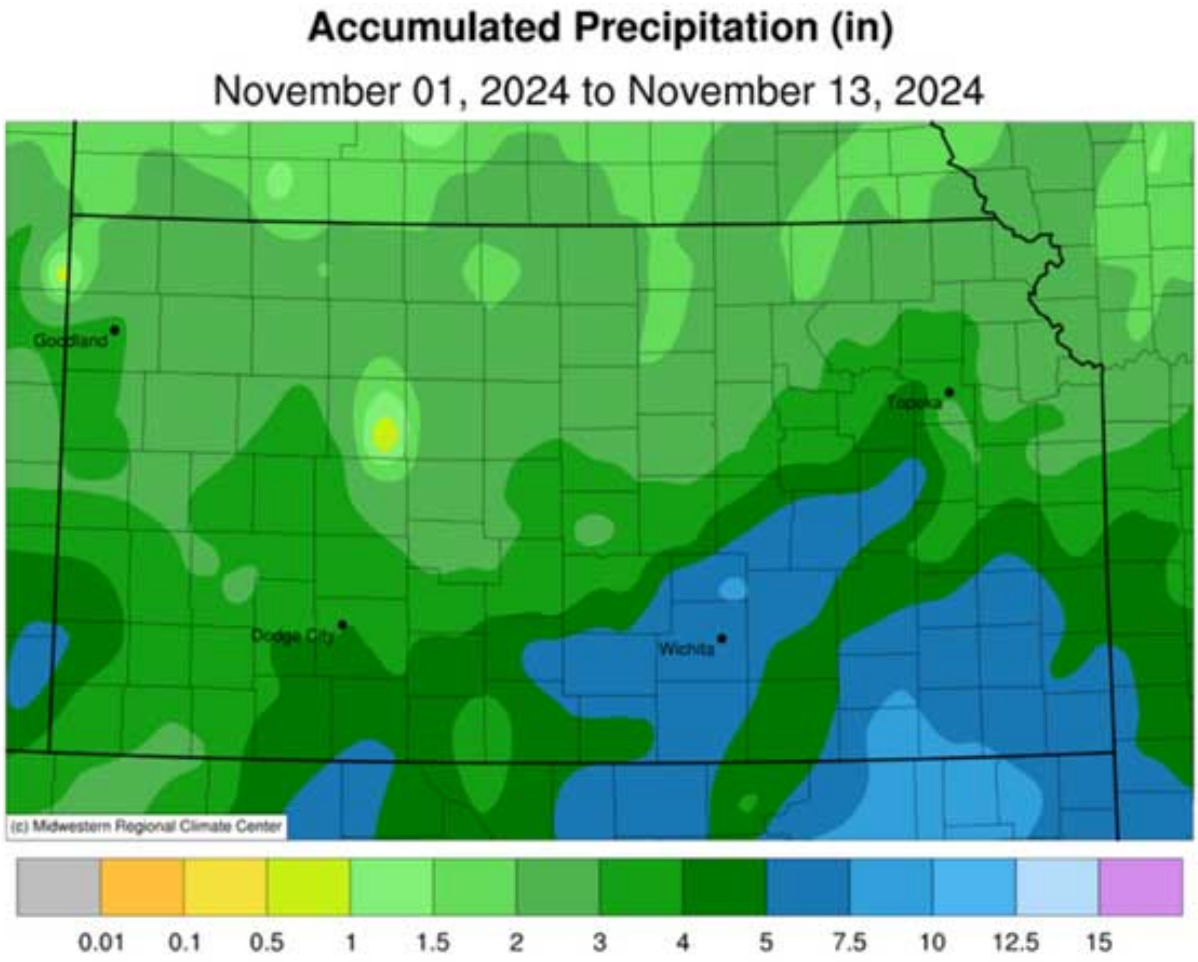
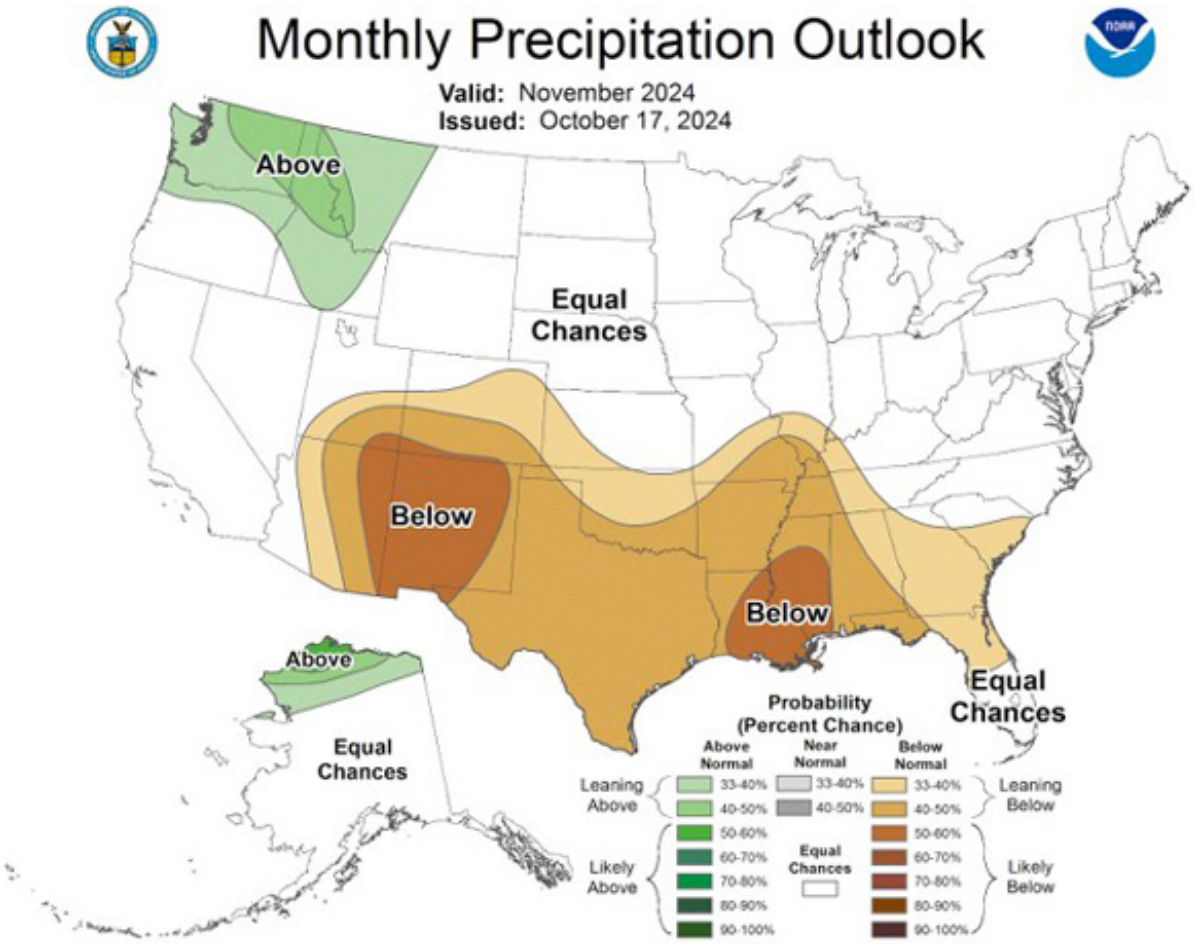


Figure 2: Accumulated precipitation so far in November 2024. Source: Midwest Regional Climate Center.

A time of outlook turmoil

Things have changed at a rapid pace across the Great Plains. The November forecast of equal chances and a favor towards drier than normal for southwest Kansas significantly changed by the end of October (Figure 3). In the next update, a favor toward wetter-than-normal conditions was introduced and increased across most of the central US. The result has been a shift from expected drought expansion to actual drought removal across the region. The origins of this substantial shift are the result of two triggers. First, the storm track has been active from the northwest, which we were expecting with the current Pacific Ocean conditions (negative Pacific Decadal Oscillation (PDO) and neutral to almost La Niña conditions). This meant that central Kansas was "living on the edge." The region was typically favored towards drier conditions, but the potential was there for a slight storm track shift, resulting in significantly different outcomes. Secondly, the tropics remain very active. Tropics pool moisture, and with an active storm track to the north, this moisture can be pulled northward into the mid-latitudes. The result has been timely precipitation post-harvest and ideal for improving soil moisture and winter wheat stands.


Monthly Precipitation Outlook
Valid: November 2024
Issued: October 17, 2024
Above
Equal Chances
Below
Below
Above
Equal Chances
Equal Chances
Probability (Percent Chance)
Above Normal
Near Normal
Below Normal
Leaning Above
Likely Above
Equal Chances
Leaning Below
Likely Below
33-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%

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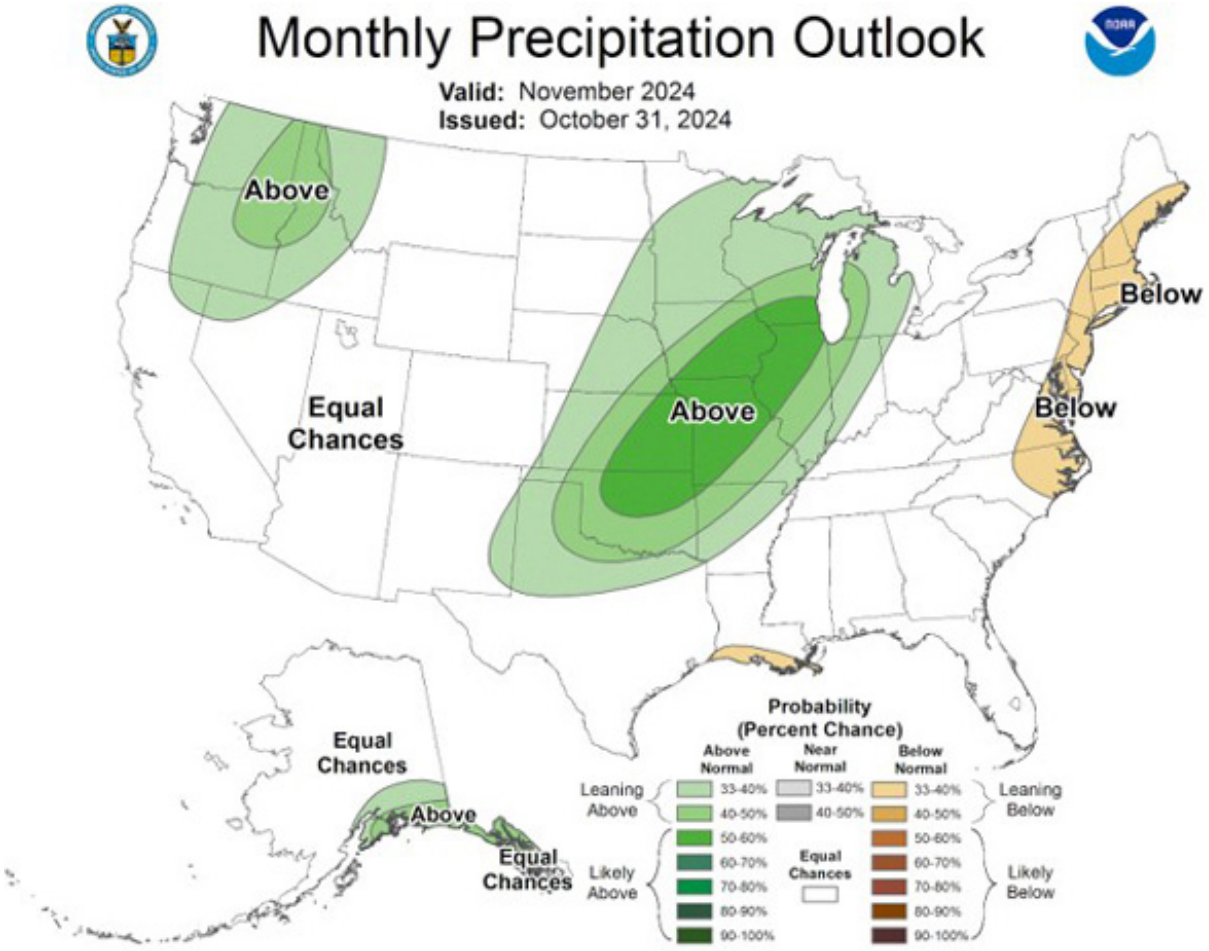


Figure 3. The Climate Prediction Outlook for November 2024 precipitation issued on October 17, 2024 (top) and then updated on October 31, 2024 (bottom).

The moisture forecast

The evolution of the eastern Pacific, or El Niño Southern Oscillation (ENSO), has been uncertain for this winter. Models have continued to wiggle around a potentially weak but short-lived La Niña (Figure 4). While it is usually good for us not to have the drier and warmer conditions associated with La Niña, it also means the outlook is a bit less certain. The north Pacific and the negative PDO status are likely to remain a prominent driver of La Niña-like northwest flow across the Plains. If we continue with active tropics, we can continue to tap into the vital moisture. However, the tropics tend to wane in activity into winter, and thus, precipitation chances will likely decrease as a result. This isn't to say we will be completely dry. We will just see a more "normal" type of precipitation pattern for the winter months. Keep in mind, winter is the driest time of the year for Kansas.

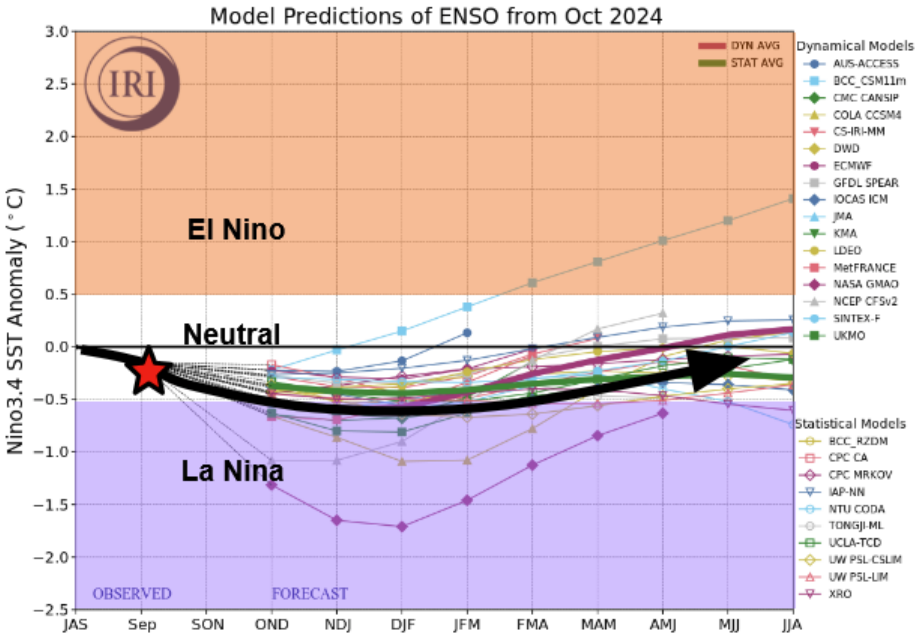
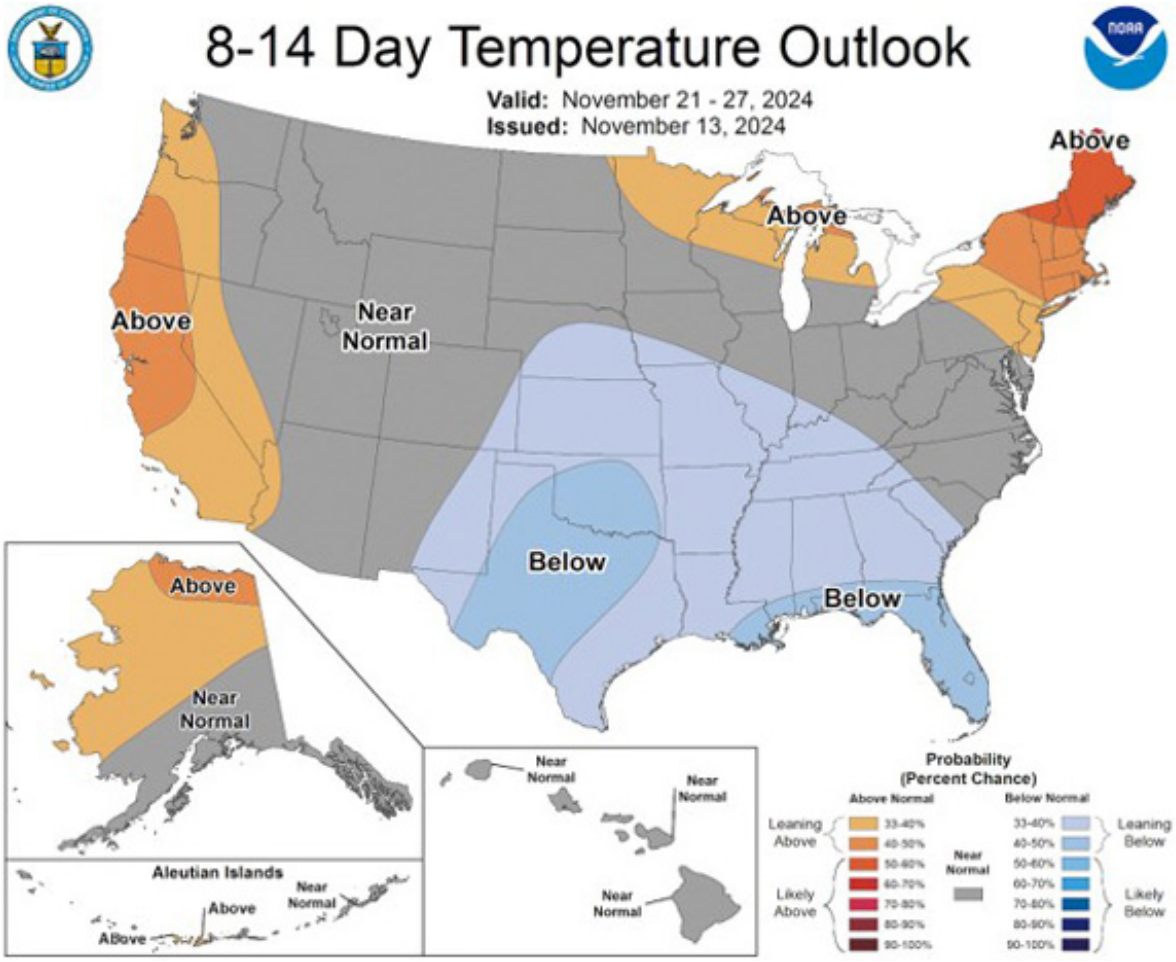


Figure 4. Current El Niño Southern Oscillation status (red star) and forecast model projections into 2025. The black arrow shows the general model trend barely reaching La Niña in December/January/February (DJF) and then returning back towards Neutral conditions.

The decrease in tropical moisture over the next week is the first sign that true winter is beginning to show its face. In the wake of a powerful system early next week, cold air will stream southward into the state. This will set up the first below-normal temperature period for Kansas for some time. This cold air in northwest flow (typical of the negative PDO) will result in much drier air residing over the region into December (Figure 5). This is the overall pattern of which we expect to be fairly common this winter. Kansas will likely remain on the edge of the coldest air to our north frequently. This delineation will also be integral in determining who sees above-normal moisture (to our north, most likely) and drier-than-normal conditions (likely to our south). Any subtle change in the jet stream over a long duration of time will result in a shift in those conditions to impact Kansas.


8-14 Day Temperature Outlook
Valid: November 21 - 27, 2024
Issued: November 13, 2024
Above
Above
Above
Near Normal
Below
Below
Above
Near Normal
Aleutian Islands
Above
Near Normal
Above
Near Normal
Near Normal
Probability (Percent Chance)
Above Normal
Below Normal
Leaning Above
Likely Above
Near Normal
Leaning Below
Likely Below
33-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%

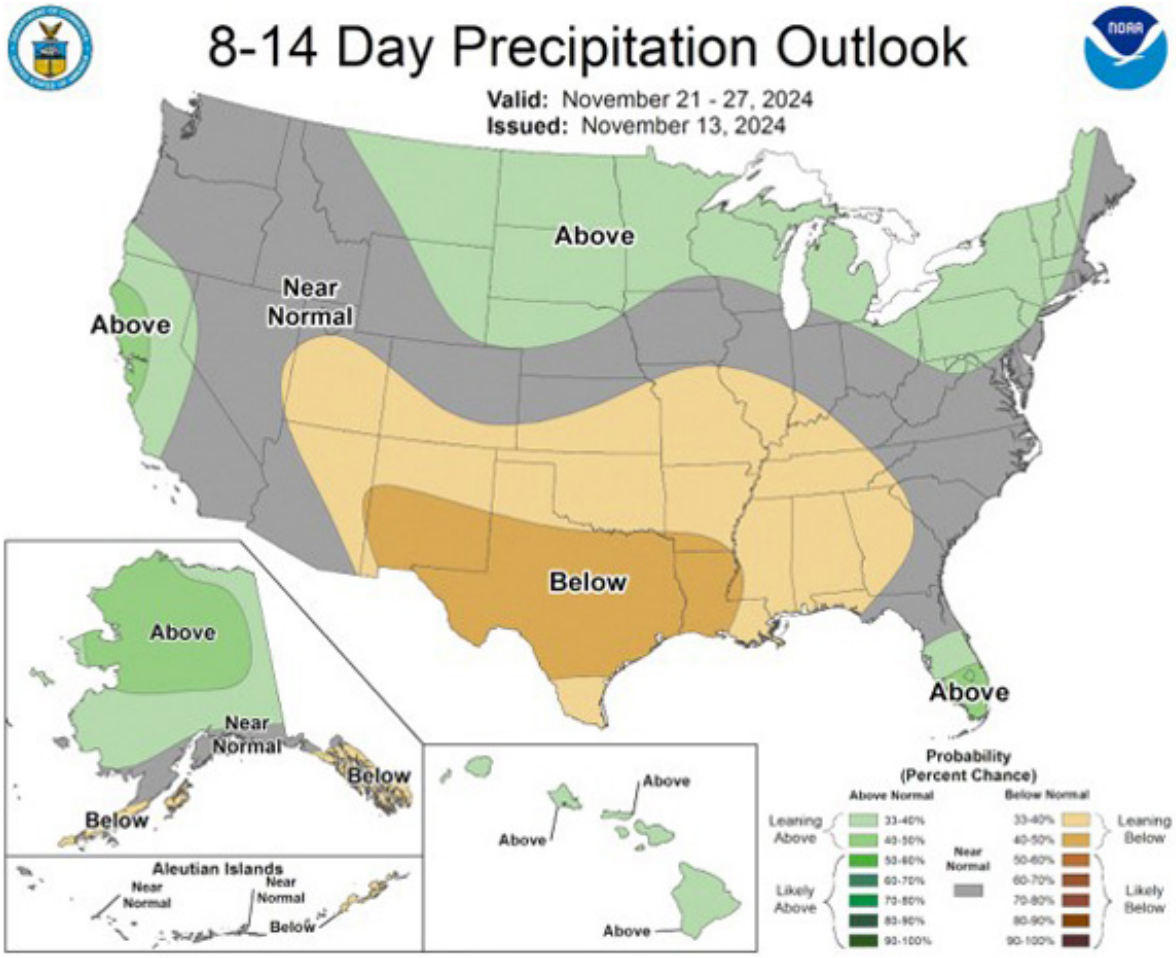


Figure 5. Climate Prediction Center temperature (top) and precipitation (bottom) for November 21-27, 2024.

Eyes to the north

One such potential fly in the ointment is the Polar Vortex. So far this season, the vortex is strong, keeping cold air pent up to our north (in the Arctic), and is stronger than normal. An indication of changing conditions is increasing snow cover over Eurasia. Snow cover at/above normal allows cold build-up that could result in stronger lobes of the vortex as it breaks down mid-winter, pushing much colder air southward. Currently, values are tracking near last year's numbers (Figure 6). Last year resulted in one episode of much colder than normal temperatures in January. The door appears open, with the combination of the negative PDO, to allow for one (or likely more) potential cold air outbreaks this winter. While overall, we still believe that winter temperatures will follow the persistent trend over the last 30 years of warmer than normal conditions, the setup is favorable for colder temperatures than we observed last year. Keep in mind that these episodes of below-normal temperatures are usually characterized by very dry air and are not conducive to moisture. Regardless, cold air is a primary ingredient for snow. However, with weak La Niña and the persistent northwest flow, conditions are not ideal for at/above normal snowfall for the season outside of one or two storms (which can influence the seasonal total).

The frequency of bigger storm systems is expected to increase in late winter. This is typical for the weak La Niña and negative PDO winters and will be enhanced at the onset of colder periods. This will result in an increase in wind events into the spring. Weak La Niñas following an at/above normal growing season precipitation year are typically favored for an increase in Kansas wildfires. The higher-than-normal fuel loading areas combined with less snow (to lay down the grasses), an increase in winds, and potential dry late winter conditions are a recipe for an above-normal fire season.

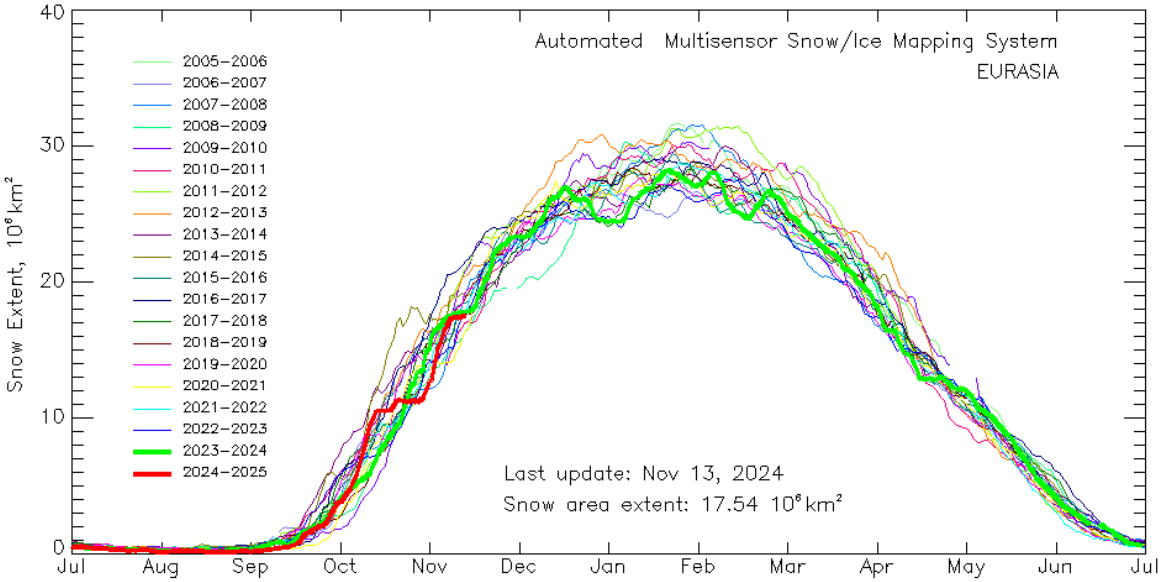
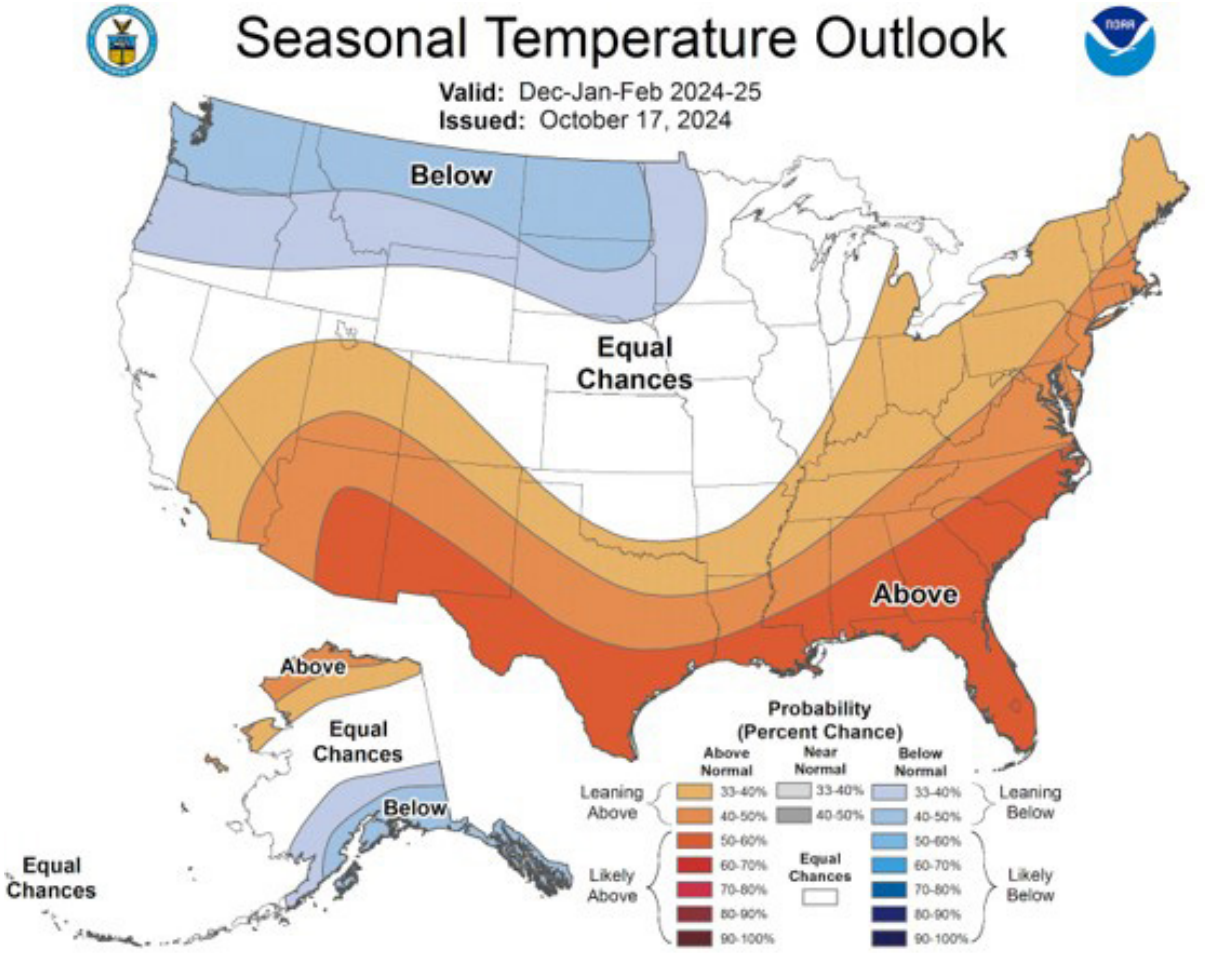


Figure 6. Eurasia snow cover this year (red) compared to previous years via NOAA NESDIS satellite imagery.

The bottom line

Recent moisture has improved soil moisture profiles statewide and will likely lead to decent moisture into early spring. Despite this, trends toward drier-than-normal conditions are still favored for this winter. Warmer than normal temperatures will prevail, but more cold snaps are expected than we observed last year. Kansas remains in the middle ground (Figure 7) between wet/dry and warm/cold conditions, and any subtle long-duration shift in the storm track may result in a different outcome for Winter 2024-2025.



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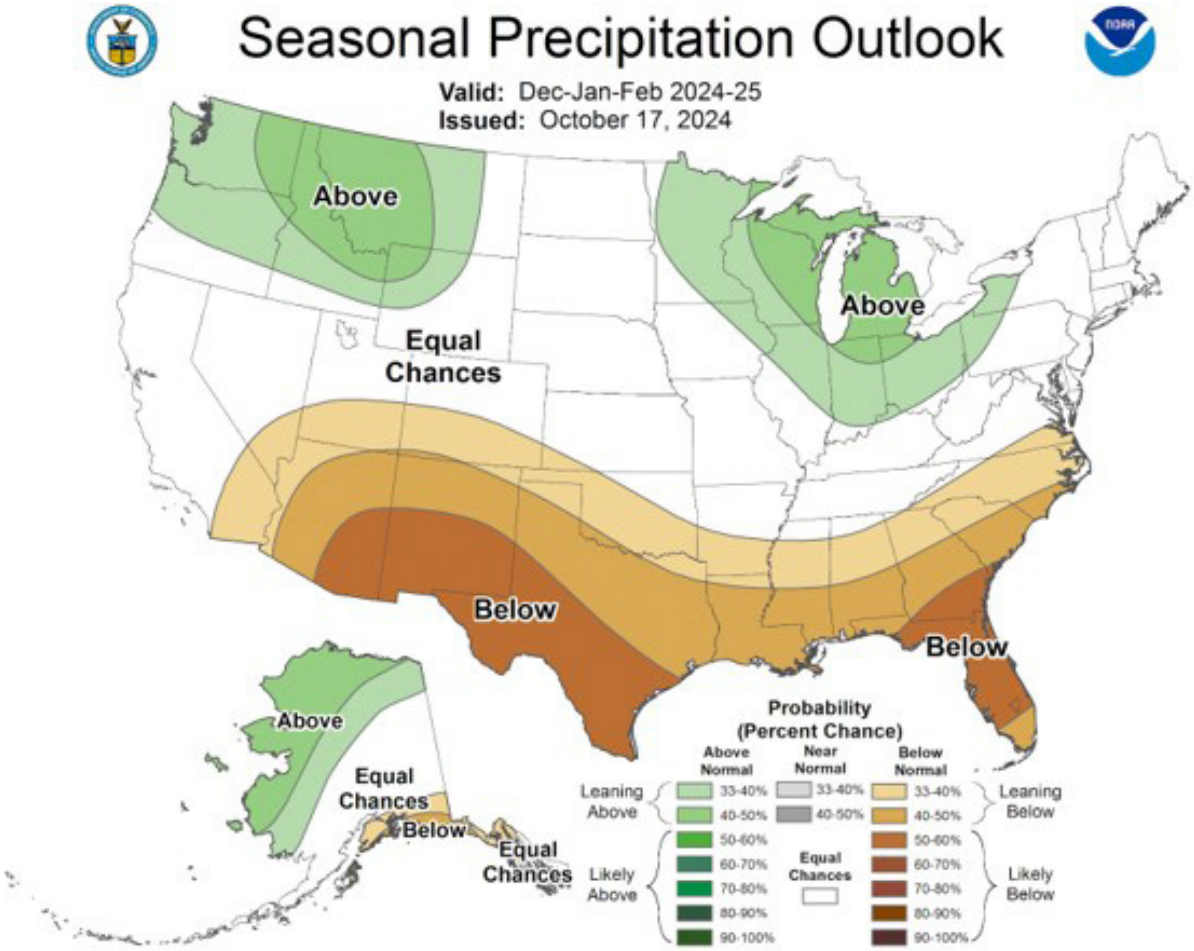

Figure 7. Climate Prediction Center outlook for December/January/February 2024-2025 for temperature (top) and precipitation (bottom).

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Chip Redmond, Kansas Mesonet
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5. 2024 K-State Crop Pest Management Schools - Nov. 19 and 20

K-State Research and Extension and the Northwest/North Central Extension Districts are hosting two Crop Pest Management Schools in mid-November. The first one is set for Nov. 19 in Beloit at the Beloit Methodist Church, and the second one will take place on Nov. 20 in Dighton at the United Methodist Church. Both events will begin at 7:45 a.m. with registration and conclude at 5:00 p.m.

Join us in person to learn how to control the latest pests – weeds, insects, and diseases – affecting all crops in central and western Kansas!

Event Schedule:

7:45 Registration
8:05 Welcome
8:15 Weed research update for western KS - Jeremie Kouame, Weed Scientist at Hays
9:10 Row crop disease that should be on your radar – Rodrigo Onofre, Row Crop Pathologist
10:05 Break
10:20 A new corn disease that should be on your radar – Anthony Zukoff, Entomologist, Garden City
11:15 Insect outlook for 2025 – Anthony Zukoff
12:10 Lunch
12:50 Drones in agronomic pest management – Deepak Joshi, Precision Ag Specialist
1:45 Recipe for tank mixing successfully – Sarah Lancaster, Weed Science Specialist
2:40 Break
2:55 Wheat diseases to watch for next spring – Jeanne Falk Jones, Craig Dinkel, Sandra Wick
3:50 Kansas Regulation (Core Hour) – Kansas Dept. of Ag
4:45 Questions/Adjourn

Commercial Applicators will earn 1 Core Hour & 7 Hours for 1A, certified by the Kansas Department of Agriculture. Certified Crop Advisors (CCA) will also earn 8 Pest Management Credits. These schools would also be an excellent educational opportunity for producers.

Now that the early registration deadline has passed, the cost to participate is $75. To register online, go to https://www.wkrec.org/events/crop-pest-management-school.html. You can also scan the QR code below. If you register at the door, cash and checks will be accepted. We are unable to accept credit/debit cards at the door. If inclement weather occurs, the program will be held at a later date in an online format.

For questions, please contact Jeanne Falk-Jones, Multi-County Agronomist, at 785-462-6281 or Sandra Wick, Post Rock District Crop Production Agent, at 785-282-6823.

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K-State Crop Pest Management School
Focused on weeds, diseases and insects found in central and western Kansas
November 19
BELOIT
Beloit Methodist Church
November 20
DIGHTON
United Methodist Church
$50, if registered by November 11
After November 11, cost is $75
Continuing Education Credits:
For 1A Commercial Applicators, 7 hours and core hour
For Certified Crop Advisors, 8 pest management credits
Have been applied for
Register online:
https://www.wkrec.org/events/crop-pest-management-school.html
Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, contact Sandra L. Wick, Post Rock Extension District, Crop Production Agent, 785-282-6823.
Kansas State University Agricultural Experiment Station and Cooperative Extension Service
K-State Research and Extension is an equal opportunity provider and employer.
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6. Don't miss the K-State/KARA Crop Production Update on Dec. 4-5

Have you registered for the 2024 Crop Production Update, hosted by the Kansas Agribusiness Retailers Association (KARA) and in cooperation with K-State Research and Extension? The two-day event will be held on December 4 and 5 at the Bluemont Hotel in Manhattan, KS. It will offer 13 CCA CEUs and 3 Commercial Applicator credits.

This training provides the latest research and technological advances in weed and insect control, fertilizer and chemical recommendations, crop production, water management, soil fertility, and more.

Speakers and Topics

December 4 – Wednesday

- Soil conservation and carbon intensity scores – Peter Tomlinson and Kathy Gehl
- Sustainable wheat value chain – Romulo Lollato
- Farm data layers and management zones – Gaurva Jha
- Crop diseases as biosecurity threats – Giovana Cruppe
- Recent advances in AI – Pascal Hitzler
- Wind erosion – DeAnn Presley
- Research update on disease management in wheat – Kelsey A. Onofre

December 5 – Thursday

- Biological products in crop production – Brian Arnall
- Cotton production in the High Plains – Logan Simon
- Irrigation management for main crops – Tina Sullivan
- Fertility management of row crops – Dorivar Ruiz Diaz
- Weed control in summer crops – Sarah Lancaster
- Variable rate technology in precision ag – Deepak Joshi

You can register for the conference by visiting https://www.ksagretailers.org/events-training/crop-production-update/. The cost breakdown is available by clicking on the registration button.

Romulo Lollato – Wheat and Forages Specialist
lollato@ksu.edu

Clay Fagan, Kansas Agribusiness Retailers Association – Director of Member Investment and Training
clay@kansasag.org

2024 KARA Crop Production Update

Kansas Agribusiness Retailers Association
K-State Research and Extension

9:20 a.m. – 4:40 p.m. December 4 and
8:30 a.m. – 2:50 p.m. December 5
Bluemont Hotel, 1212 Bluemont Ave., Manhattan, KS

Topics

- Conservation and carbon intensity scores
- Sustainable wheat value chains
- Farm data layers and management zones
- Crop diseases as biosecurity threats
- Recent advances in AI in Agriculture
- Wind erosion
- Research update on wheat diseases
- Biological products in crop production
- Cotton production in the High Plains
- Irrigation management for main crops
- Fertility management of row crops
- Weed control in summer crops
- Variable rate technology in precision ag

Speakers

- Peter Tomlinson and Kathy Gehl
- Romulo Lollato
- Gaurav Jha
- Giovana Cruppe
- Pascal Hitzler
- DeAnn Presley
- Kelsey A. Onofre
- Brian Arnall
- Logan Simon
- Tina Sullivan
- Dorivar Ruiz Diaz
- Sarah Lancaster
- Deepak Joshi

This event will offer 13 CCA CEUs and three Commercial Applicator credits.

Register online at https://www.ksagretailers.org/events-training/crop-production-update/
For registration questions, please contact Clay Fagan at clay@kansasag.org or 785-234-0461.
Prices differ depending on membership status and program selected.

Coffee breaks and lunch are included with registration and will be provided both days.

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Kansas Agribusiness Retailers Association

7. Sorghum Connection Series Extends Support to Kansas Growers with Winter Series

The Sorghum Connection Series, launched in September by the Kansas Grain Sorghum Commission (KGSC) in collaboration with K-State Research and Extension and the Department of Plant Pathology, announces a comprehensive winter educational program.

Building on the success of its inaugural field day series focused on stalk rot prevention and producer profitability, the Sorghum Connection team is offering an additional series of one-day events across central and western Kansas. The events will be held in Salina on Dec. 4, Hays on Dec. 5, and Garden City on Dec. 6.

Attendees will gain valuable insights from leaders at K-State on critical topics such as:

- Managing chinch bug populations by Anthony Zukoff
- Effective weed management strategies by Sarah Lancaster
- Unleashing the potential of sorghum in the pet food industry by Julia Pezzali
- Navigating the sorghum marker outlook by Dan O'Brien

Each event will begin with registration at 8:00 AM and will conclude at approximately 3:00 PM. To register or learn more about these events, please visit www.ksgrainsorghum.org.

The Sorghum Connection Series offers a unique opportunity for Kansas sorghum growers to connect, learn, and stay ahead of the curve. Don't miss this chance to cultivate success in the years ahead.


Kansas GRAIN SORGHUM Commission
SORGHUM
CONNECTION
K-STATE
Research and Extension
SORGHUM CONNECTION
WINTER SERIES
Mark your calendars for local winter summits aimed to bring multi-disciplinary, data-driven information to Kansas grain sorghum producers to help improve on-farm productivity and profitability.
DECEMBER 4, 2024 | SALINA
DECEMBER 5, 2024 | HAYS
DECEMBER 6, 2024 | GARDEN CITY