In This Issue

Forage Management Necessities For Improved Yield, Quality, And Persistence

(Keith Johnson)

There are many challenges with forage production and utilization. There are some tools that can improve yield, quality, and persistence of forages. Consider acquiring the "tools" that you do not have as the 2024 growing season begins.

Resource information – The *Purdue Forage Field Guide* and subscriptions to forage magazines have great value if information learned is utilized in the forage business. The 4th edition of the *Purdue Forage Field Guide* was released in late 2023. It can be purchased through the following link Forage Field Guide, fourth edition (purdue.edu). The Guide has over 300 pages of useful information about forage identification, production, and utilization.

Calendar – Having a computer-based calendar or a desk calendar with room for taking notes on each day has value. Observations, tasks accomplished, and weather notes can prove to be valuable. If problems occur, the data may be helpful in better defining the cause of the concern.

Soil probe – A heavy-duty soil probe for collecting soil samples is preferred to a spade or shovel. Avoid nutrient deficiencies and excess fertilization by sending soil samples to a soil testing laboratory and following through with needed recommendations. OSU Extension Publishing

Weed Control Guide – Purdue University, Ohio State University, and the University of Illinois have an outstanding publication provides that provides herbicide options for problematic weeds in common agronomic crops, including alfalfa and grass pastures. 2024 Weed Control Guide for Ohio, Indiana, and Illinois (purdue.edu)

Sweep net – Do you have harmful or beneficial insects? The sweep net is an excellent way to determine whether one should be concerned about an insect pest, especially potato leafhopper in alfalfa.

Moisture tester – Ever made moldy hay? Worse yet, have you ever had a hay storage structure burn from hot hay? Using a moisture tester to determine if hay is at the correct moisture for packaging can minimize these concerns.

Thermometer – Testing hay temperature when in storage for *several weeks* will determine whether there is a possible hay fire risk.

Hay probe – Sampling hay properly for nutritional value requires a hay probe. A ration for livestock can be developed when forage quality results and information about the livestock being fed is given to a trained livestock nutritionist. Visit the website www.foragetesting.org for details about forage testing.

Penn State particle separator – Do you make chopped silage? If so, percentage values of particle size attained by using the Penn State particle separator will help adjust knife gap on the forage harvester so improved packing, reduced silage sorting, and less acidosis occurs.

Purdue Plant and Pest Diagnostic Lab – Are you troubled with problems in a field that need the help of a diagnostician or specialist? Information about sample submission can be found at Plant and Pest Diagnostic Laboratory (purdue.edu).

Unmanned Aerial Vehicle – After having access to the above items, becoming licensed to fly an unmanned aerial vehicle, or seeking help from a trained operator, can prove helpful in identifying problems with forages, and day-to-day livestock management, too.

Indiana Forage Council and livestock association memberships – Networking with people of like interest and supporting the activities of an industry has value. Consider membership.

Indiana Forage Council www.indianaforage.org

Indiana Dairy Producers www.indianadairy.org

Indiana Beef Cattle Association www.indianabeef.org

Indiana Sheep Association www.indianasheep.com

There are many items that are helpful in improving your forage farming business. These are necessities to have available for reference and use.

The Purdue Forage Field Guide has forage production, harvest and utilization information that can be helpful in improving the forage-livestock enterprise. (Photo Credit: Keith Johnson)

The Spring Seesaw

(Beth Hall)

I was trying to think of a word that conveyed quickly going from one extreme to another. "Roller coaster ride" seemed a bit over used and yet "whiplash" didn't quite fit. Hmmm, what is something that can go up and down, back and forth, bouncy-bouncy? Then it occurred to me: "seesaw". Certainly, this incredible inconsistency that our atmosphere has been exposing us to is not unusual for the Midwest. That does not make it any less jarring, though, to go from needing to wear sweaters and a coat to then forgetting that coat at the office because the weather got warmer. The poor abandoned coat is quickly forgotten until a few days later when we cannot find it on the way out the door in chilly conditions.

Yes, the season of spring is like a seesaw that bounces back and forth between winter- and summer-like conditions. I am getting better at remembering my coat at the end of the day, fortunately. Nowadays, I worry about the beautiful magnolia and other flowering trees that could get hurt from the next cold snap. Of course, they always seem to survive fine enough.

When will the next warm pulse happen? Will it be the last? Is it safe enough for me to start planting the garden and putting away the snow shovels? Is there room in the shed for both the lawn mower and snow blower? Sure, there is likely guidance for these and other questions from those of us anxious to be done with winter. In the meantime, I can at least start planning for those projects outside while I keep those sweaters and coats close by!

We hope you enjoy being subscribed to this newsletter. Feel free to share this with others (they can **subscribe here**). We'd love your feedback too, so if you have any questions or suggestions, please don't hesitate to email me at **bethhall@purdue.edu**.

The Winter That Wasn't

(Austin Pearson)

The 2023-2024 meteorological winter (December, January, and February) has concluded, but it seems as if we only experienced a couple weeks of winter-like weather this season. Indiana's average temperature was 35.8°F, which was 5.3°F above normal. This was good for Indiana's second warmest winter since records began in 1895. The warmest winter on record was 1931-1932 with an average temperature of 37.4°F, an astonishing 1.6°F warmer than this winter. As for the Midwest, it was the warmest winter on record (32.7°F). Interestingly, it was the first time on record that the winter temperatures averaged above the freezing mark.

Indiana's winter precipitation was nearly normal totaling 8.26 inches (0.18 inches below normal). The bigger story was the lack of snowfall as the majority of the state ran 5-10 inches below normal, and in some cases 10-25 inches below normal, for the winter (Figure 1). The Midwestern Regional Climate Center's Accumulated Winter Season Severity Index (AWSSI) objectively quantifies the relative severity of the winter season by accounting for the intensity and persistence of cold weather, the amount of snow, and the amount and persistence of snow on the ground. Most of the Midwest, like Indianapolis, experienced near record mild conditions this winter (Figure 2).

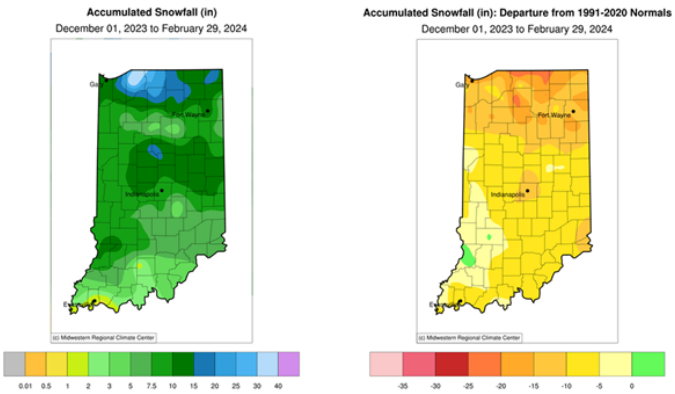

Figure 1: Left – Winter 2023-2024 snowfall totals from December 1 – February 29. Right – Winter 2023-2024 snowfall totals represented as a departure from the 1991-2020 climatological average snowfall.

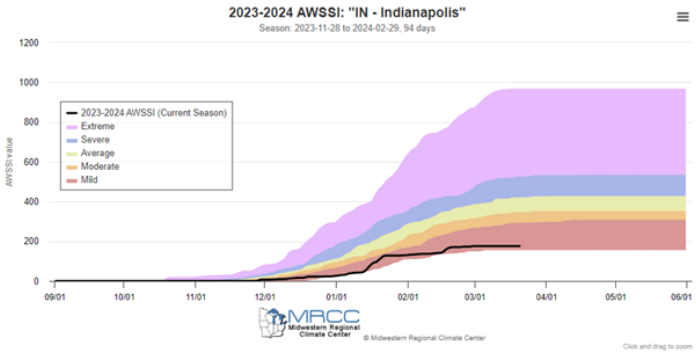

Figure 2: MRCC's AWSSI for Winter 2023-2024 for Indianapolis, IN. This winter has been a near-record mild winter for Indianapolis.

On a positive note, drought conditions have improved throughout the winter (Figure 3). In December, over 44 percent of the state was in moderate drought (D1). Drought monitor conditions improved throughout the winter, as all that remained at winter's end was abnormally dry (D0) conditions in central and southern Indiana.

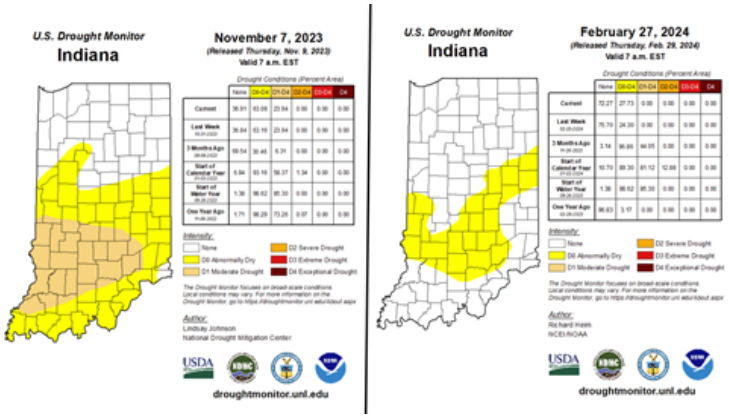

Figure 3: Left – US Drought Monitor from December 5, 2023. Right – US Drought Monitor from February 27, 2024.

As for more recent conditions, the first 27 days of March have continued to run 6.3°F above the 1991-2020 climatological average. We have had some impressive precipitation totals in the first week of March as Adams and Daviess Counties measured around 3.75 inches in the first week of the month. Heavy precipitation totals were rather localized, as portions of central and southern Indiana recorded below-normal precipitation (Figure 4). Since February, though, precipitation totals have been less than 75 percent of normal for central and southern Indiana. Abnormally dry conditions in this week's US Drought Monitor are expanding in southern Indiana as a result (Figure 5).

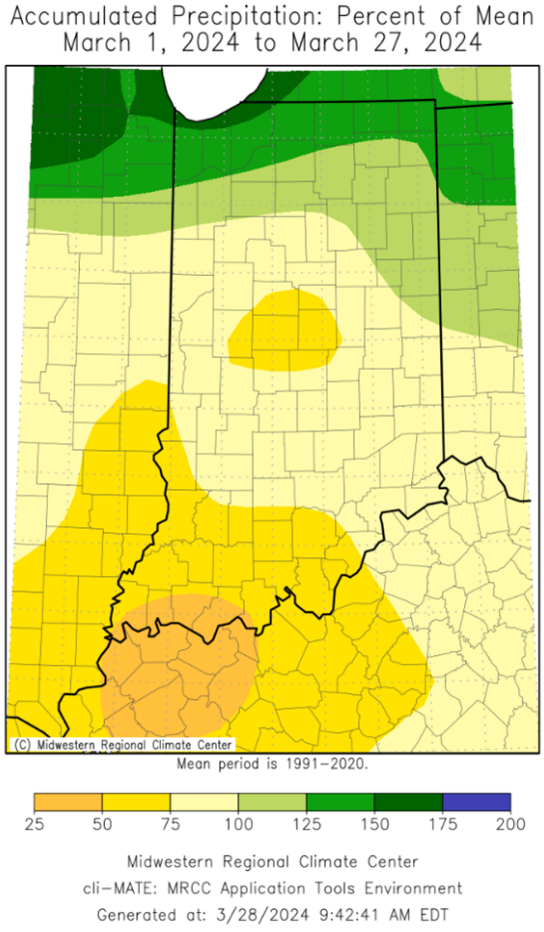

Figure 4: March 1-27, 2024 accumulated precipitation represented as a percent of the 1991-2020 climatological average.

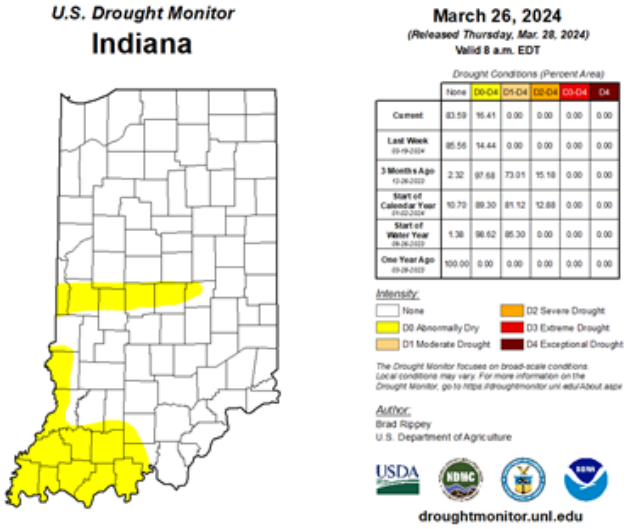

Figure 5: US Drought Monitor – Indiana Map, released March 29, 2024.

Rain forecast totals range from just under an inch (southern Indiana) to just over 2 inches (northern Indiana) from March 28-April 4, much of which is needed (Figure 6). Whether this actually happens is to be determined. The Climate Prediction Center (CPC) has slightly elevated chances of below-normal temperatures and increased confidence in below-normal precipitation from April 2-6. April 4-10, the CPC has higher confidence in above-normal temperatures and above-normal precipitation. If you missed Hans Schmitz's Indiana spring 2024 climate outlook, titled "Kiss from a Rose on El Nino's Grave", be sure to check it out.

Figure 6: NOAA's quantitative precipitation forecast for March 28-April 4, 2024.

Kiss From A Rose On El Nino's Grave

(Hans Schmitz)

This spring is likely to be more of a tale of individual months than of a season. For the three-month period of March, April and May, the national Climate Prediction Center (CPC) predicts Indiana to be warmer and wetter than the climatological average conditions. For temperatures, the signal is stronger for warmth in Northern Indiana than in Southern Indiana. For precipitation, the wet signature is stronger in Southern Indiana than in Northern Indiana. However, much of this signal depends on the setup in March.

El Nino is on its way out, to be replaced by the El Nino-Southern Oscillation's (ENSO's) Neutral phase (as opposed to the La Nina or El Nino phases) by the end of the spring. While El Nino subsides, the precipitation signature for March has equal chances of above, average or below normal precipitation, setting the stage for slightly wetter signals in April and May. This is consistent with the trend of narrow planting windows in the spring in Indiana. At the earliest, ENSO Neutral conditions begin in April, which removes one relatively strong predictor (El Nino) from the forecast. Trends over the past 30 years toward increasing precipitation are generally stronger in Southern Indiana than Northern Indiana. The CPC map reflects this trend.

Meanwhile, temperature signals trend more toward long-term historical trends than anything related to ENSO. Northern

conditions trend warmer in the nation, with Indiana following suit. However, the trend for warmer temperatures should not be taken as a sign to start unseasonable activities. The likelihood for a normal period of frost and/or freezing temperatures remains high throughout the month of March. For further guidance on the climatology of the last spring freeze and frost dates, check out the Midwestern Regional Climate Center's Freeze Date Tool.

"It's important to assess the climatological risk associated with early planting and potential late season freeze events," according to Beth Hall, Indiana State Climatologist. "While every spring is different, tools such as the Freeze Date Tool can quickly provide guidance that help farmers and gardeners make more informed decisions."

Many pest cycles depend on growing degree days in the air or soil with different base temperatures. The recent late February warmth, if sustained, could mean some insects emerge early. Likewise, early flowering plants could show color earlier than expected. However, the likelihood of a freeze event is high, so the need to ensure sensitive desirable plants are protected may be greater this year than in some years past. Don't forget Bradford or Callery Pears are not a desirable plant. For more information, please contact the Indiana State Climate Office at 765-494-8060 or hschmitz@purdue.edu.

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