

Southwest Michigan Field Crops Updates
August 1, 2023

Here are updates from the MSU Extension Field Crops team in Southwest Michigan. If you have any items you would like me to include in future email updates—whether events you want others to know about or topics you would like to have addressed—please send me an email or call the office.

Southwest On-Farm Research Field Day August 23

This field day is a long-standing event held in St. Joseph County highlighting on-farm research efforts of MSU Extension specialists and educators in the region. Topics include important issues that farmers in southwest Michigan face in terms of agronomy, pest management, farm safety, and environmental stewardship. The event has been offered free to attendees over the years due to the generous support from the Michigan Soybean Committee, and additional funding this year is being provided by the USDA Natural Resources Conservation Service Project. Farmers, agribusiness professionals, agency staff, and those interested in agriculture are welcome to attend.



The day begins at 8:00am with check-in and a light breakfast, and the first educational session begins at 8:30am. Lunch will be provided by Pighead BBQ in Sturgis (need we say more?), and the day will conclude by 2:00pm. **BONUS:** As the topic of on-farm safety and combine fires will be addressed, we will be giving away 3 fire extinguishers during a drawing at the end of the meeting!

CREDITS: 3 RUP credits, 5 CCA credits and MAEAP Phase 1 credit have been requested

COST: Cost is FREE due to generous funding from the Michigan Soybean Committee and the USDA Natural Resources Conservation Service Project (grant #NR213A750013G015)

REGISTRATION: [Register online](#) by Aug. 17 to reserve a meal. Walk-ins will be accepted but lunch is not guaranteed.

AGENDA:

- Importance of Irrigation System Evaluation — Younsuk Dong, MSU Irrigation Specialist
- Using Soil Moisture Sensors to Improve Water Use Efficiency — Brenden Kelley, MSU Research Assistant
- End-of-Season Irrigation Management — Lyndon Kelley, MSU and Purdue Extension Irrigation Educator
- 15 Years of Michigan Soybean On-Farm Trials — Mike Staton, MSU Extension Soybean Senior Educator
- Vole Management in Soybean Update — Eric Anderson, MSU Extension Field Crops Educator
- Tar Spot, White Mold and Other Diseases in 2023 — Marty Chilvers, MSU Extension Field Crops Pathologist
- Lessons from the LTER at the Kellogg Biological Station — Christine Charles, MSU Extension Regenerative Agriculture Educator
- Strip Tillage: A Long-term Perspective — Henry Miller, Farmer
- MAEAP Update and Focus on Farm Safety — Emily Haluda, MAEAP Technician, Cass County
- Fire! Fire! Combine Safety and Fire Prevention — Rich Baker, Farmer, Burr Oak Volunteer Firefighter

MSU Extension SW Michigan Field Crops Agronomist Extension Educator Position Now Posted

As I mentioned this spring, I will be taking on a new role within Extension next year as the statewide soybean educator. The opening for my current job out of the Centreville office has now been posted and can be found by going to the [MSU careers](#) page and entering job #885131 in the job search field. Please help distribute this posting far and wide so we get the best candidates to apply! Here is a brief summary of the posting. Feel free to reach out to me if you want to chat about what working for Extension is like.

Position Overview

This position provides local and regional leadership and educational programming expertise in annual field crop production, specifically corn and seed corn, soybeans, wheat, and seed wheat, and development of educational programming related to the adoption of precision agriculture and nutrient management technologies in the field crops industries in southwest Michigan.

As a subject matter expert, you will work collaboratively with work team members, MSU service units, allied industry, and farmers to design, implement, deliver, and evaluate educational programming to meet high priority needs of clientele. This will include developing educational programming related to the adoption of precision agriculture and nutrient management technologies in the field crops industries. Additionally, work may include crop and pest scouting and reporting that information to the industry and troubleshooting field level questions.

Qualifications

Minimum Qualifications (see full description for complete list of requirements)

- Bachelor's degree in a field of study related to crops science, horticulture, soil science, entomology, plant pathology, or related field, with an expectation to complete a master's degree within a specified time period after hire.

Salary: \$55,000 or commensurate with education and experience

Application Deadline: September 5, 2023.

New SARE Bulletin: What is Sustainable Agriculture?

At its heart, sustainable agriculture is simple. In practice, it's much more complicated. Farmers and ranchers who value sustainability embrace three common goals for a successful production system:

- Profit over the long term
- Stewardship of our nation's land, air and water
- Quality of life for farmers, ranchers, farm employees and communities

SARE's newly revised [What is Sustainable Agriculture?](#) publication provides a primer to practices that can help farmers and ranchers improve the sustainability of any complex, integrated production and marketing system. The bulletin is [available to order in print or to download](#).

- **Soil Health:** Healthy soil provides a strong foundation for the vitality of any crop or forage. Cover crops, conservation tillage and effective compost and pasture management can help producers improve soil quality.
- **Biological Diversity:** Crop rotation and integrated crop and livestock systems are proven approaches for managing water quality, cycling nutrients and interrupting the life cycles of pests.
- **Health and Wellbeing of People:** Safe and humane working conditions and fair compensation for producers and farmworkers are essential components of a sustainable production system.
- **Ecological Pest Management:** Understanding insect, weed and disease pests can help producers improve control through scouting, reduced applications, biodiversity and other tools.

...[and more!](#)

On the Lighter Side-Bird ID App

During a recent conference I went to with state wildlife specialists around the country, I caught wind of a very cool app for identifying birds. The free Merlin app from The Cornell Lab is available for both Android and Apple. There are different ways to ID birds with the app. If you see it, you can take a picture of it, answer a few questions, and it will give you a list of possible species. If the bird was too quick for you, you can select several drop-down options in a decision tree to get a list of possible species.

And my favorite? You can select “Sound ID” and hold your phone out while the bird is chirping and the app will identify what it is hearing. In the screenshot here, you can see that these three birds were sounding after I hit the button, and the ones highlighted in yellow were actually chirping when I took the screenshot. Very cool!

P.S. It did not work for a domestic goose call from the neighbor’s flock. 😊



Weather and Crop Update

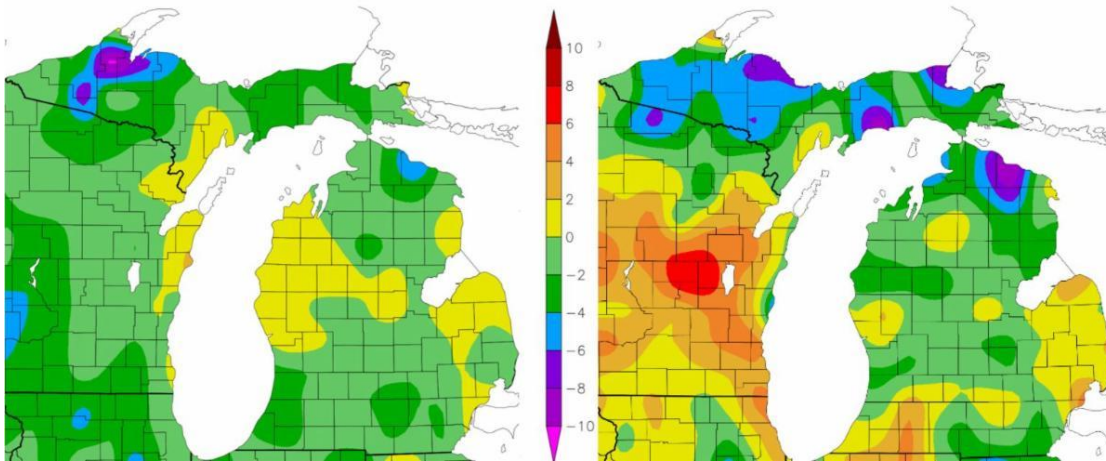


Corn nearing the end of the silking stage as the silks begin to turn pink, reddish brown and then brown. Photo courtesy of Eric Anderson.

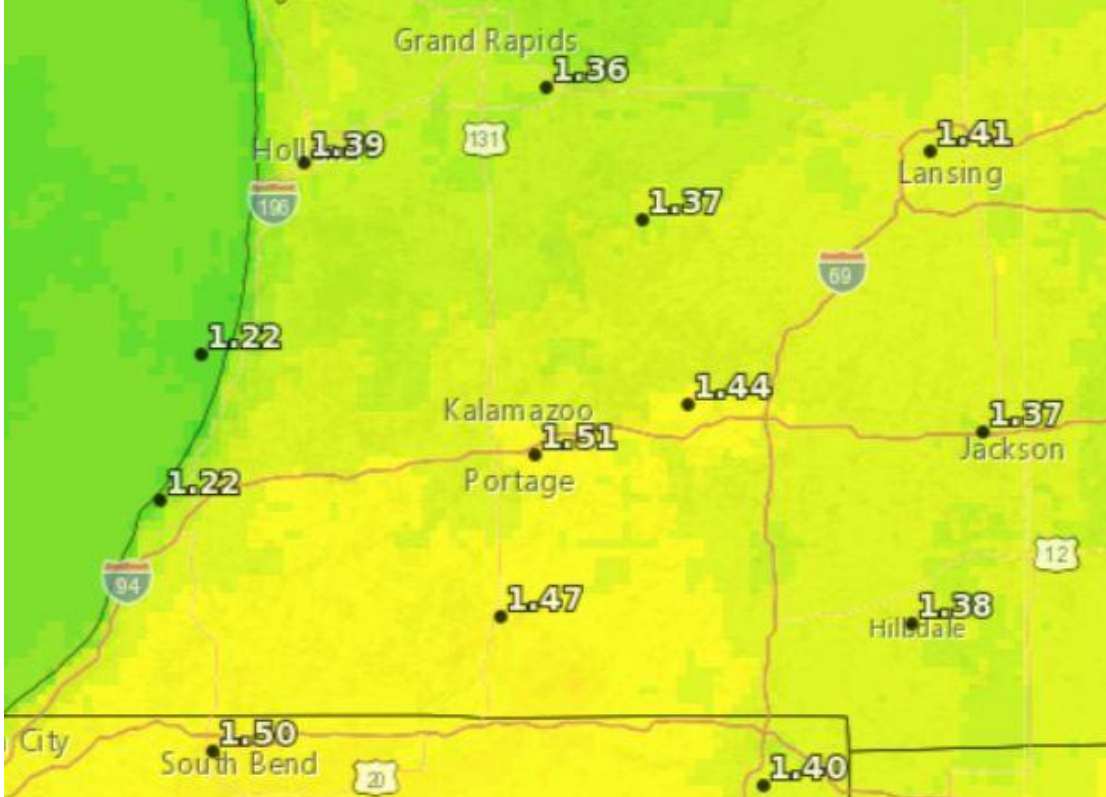
Weather

Temperatures this past week were slightly cooler than normal in the region at night but up to 6 degrees warmer than normal during the day for an overall near-normal average. We accumulated 135 growing degree days (GDD base 50), and we continue to be near average for GDD₅₀ accumulation this year. The forecasted reference evapotranspiration rate (FRET) is roughly 1.5 inches for most of the region for the week ending August 2 which is about what it’s been for the past month. Temperatures will continue to be hot until the frontal system moves through late Friday and then return to near-normal through next week, and an additional 167 GDD₅₀ are predicted for the coming week. The medium-range outlooks call for near-normal to below-normal temperatures or the first week of August.

Southwest Michigan Field Crops Update – August 1, 2023 - 4



Departure from normal for average minimum (left) and maximum (right) temperatures for the week ending July 26.

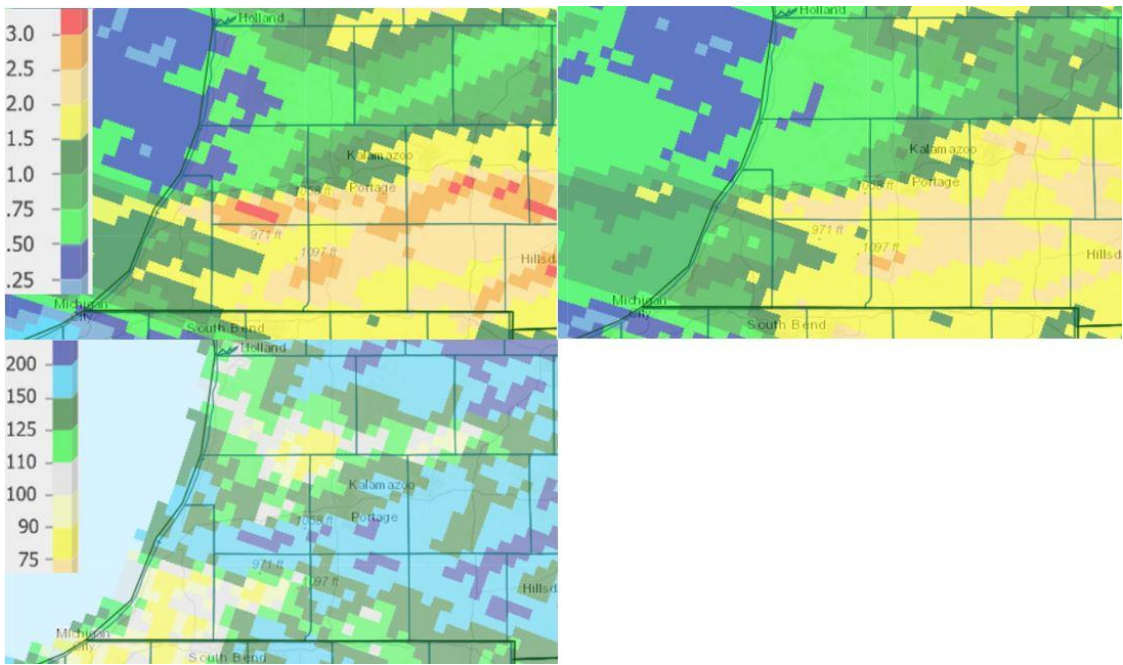


Total weekly forecasted reference evapotranspiration rate (FRET) for the week ending August 2.

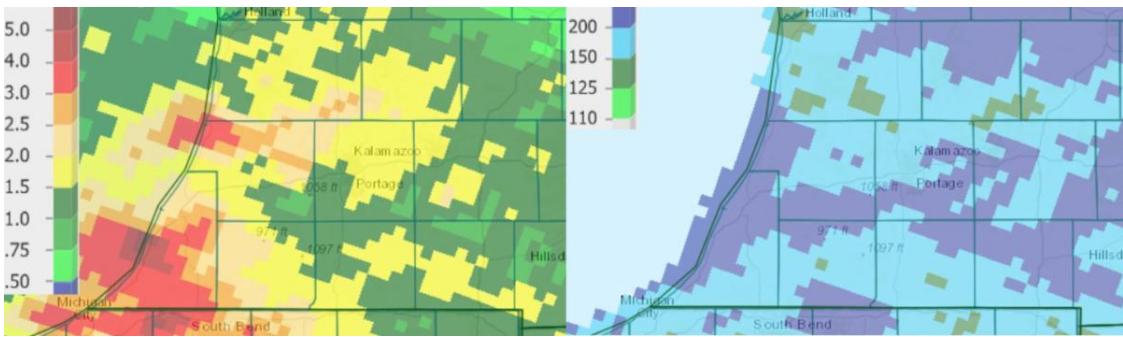
Rainfall this past week before Wednesday was relatively low compared with the rest of the state with totals ranging from 0-2 inches. The storm front on Wednesday brought impressive totals of 2-3 inches, but areas north of that band saw only a fraction of that. Strong winds were associated with that storm front, and although hail was predicted, essentially all damage to crops and trees was from wind. With timely rainfall over the past few weeks, most of the region enjoyed above-normal totals over the past 30 days although pockets of up to a 25% deficit exist. And then we got more rain on Friday! Impressive weekly totals ranged from 1-6+ inches with most areas receiving 3-5 inches, and now the entire region is above-normal for rainfall over the past 30 days.

The drought monitor (July 27 release) is largely unchanged from last week but does not reflect the effect of rainfall over the past 24 hours. The forecast for the coming week is for less than 0.25 inch which should be perfect for those looking to bale hay. The medium-range outlooks call for near-normal chances of precipitation for the first week of August.

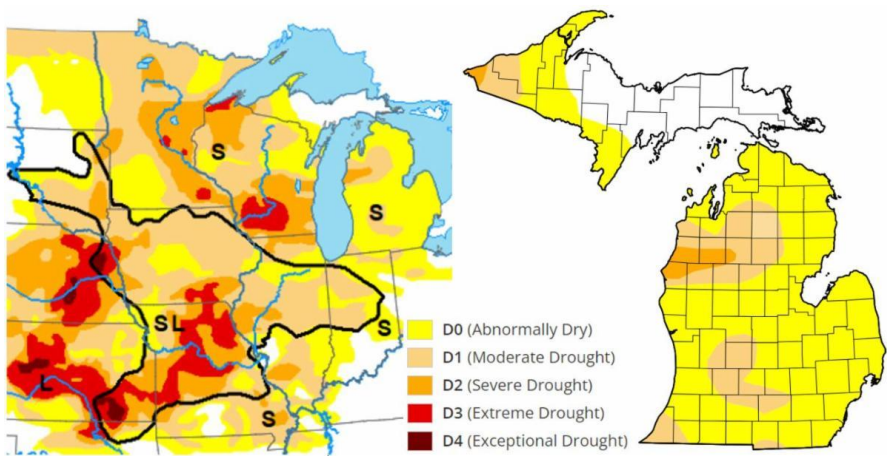
Southwest Michigan Field Crops Update – August 1, 2023 - 5



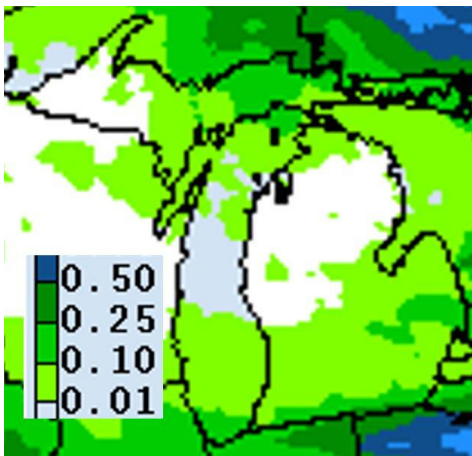
Precipitation totals for the past 24 hours (upper left) and 7 days (upper right) and percent of normal for the past 30 days (lower left) as of July 27.



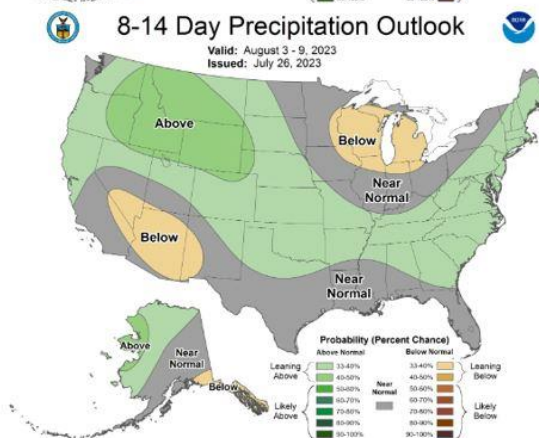
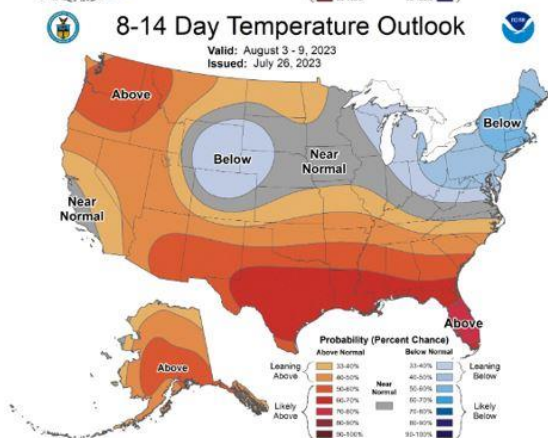
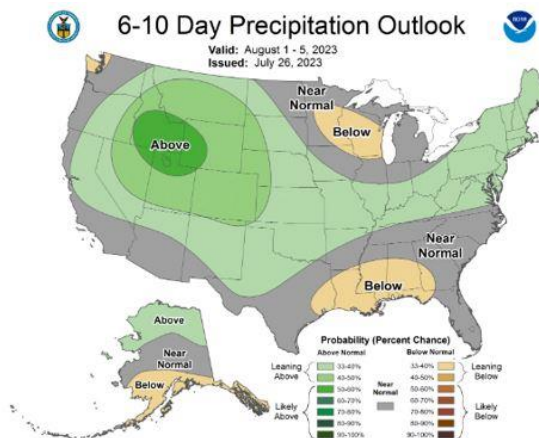
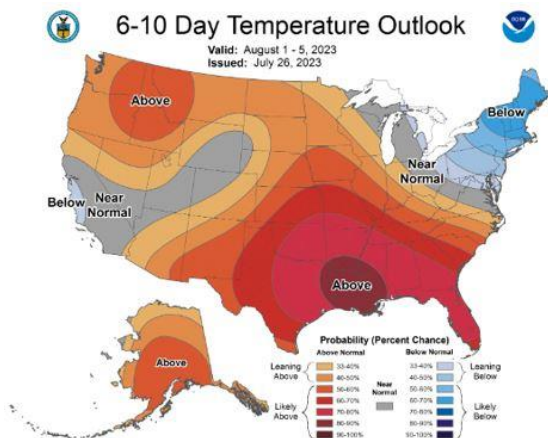
Precipitation totals for the past 24 hours (left) and percent of normal for the past 30 days (right) as of July 29. Storms this week have definitely changed things.



Drought monitor released July 27



Precipitation forecast for July 29-August 5.

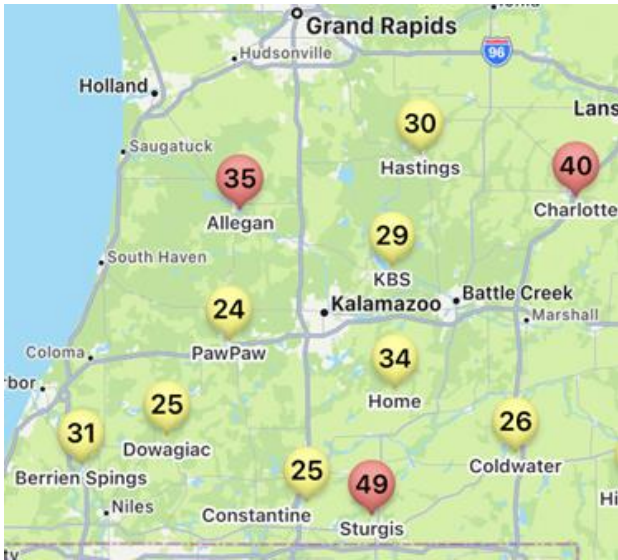


The 6-10 day (August 3-7, top) and 8-14 day (August 5-11, bottom) outlooks for temperature (left) and precipitation (right).

Crops and Pests

Corn and soybean are taking advantage of the typical late-July temperatures, and most fields are advancing through early reproductive stages. Most corn fields have tasseled, and many earlier-planted fields have reached silking (R1). It takes approximately 10-14 days for corn to advance through the silking stage, and I expect those fields to reach brown silk and blister stage by next week. Confirmed tar spot reports remain unchanged in Michigan, but several more counties in northwest Indiana have been added to the [Corn ipm PIPE tar spot map](#). Tar spot risk remains medium to high for most locations in the region, and with precipitation this week, that risk will likely increase. However, as MSU field crop pathologist Marty Chilvers commented, we are getting a little late for initial tar spot infection, so hopefully that equates to low impact from the disease this year. If you find tar spot lesions, you can get the tar spot map updated by emailing pictures with county location to Chilvers (chilvers@msu.edu).

Southwest Michigan Field Crops Update – August 1, 2023 - 7



Tar spot risk level according to the Tarspotter app.

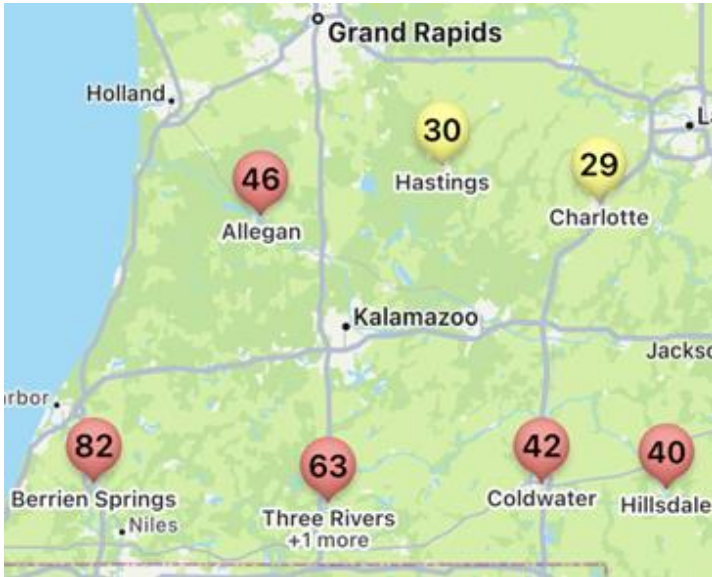
Soybean in all fields visited has reached R2 (full flower, an open flower at one of the two uppermost nodes on the main stem) and fields with early plantings and/or maturity groups are approaching R4 (full pod, pods are 3/4 inch at one of the four uppermost nodes on the main stem). Minimal insect feeding has been observed, mostly from Japanese beetles which rarely cause economic injury even in years like this with higher pest pressure. No diseases have been reported yet except the typical Septoria brown spot on some lower-canopy leaves. The Sporecaster app for white mold continues to show high risk of white mold in the southwest portion of the region and medium risk toward central Michigan. We are nearing canopy closure in fields with 30-inch rows unless they were “beaten up” with an aggressive herbicide application earlier in the season.



Soybean at beginning (R3, left) and full (R4, right) pod stage. Photos courtesy of Eric Anderson.



Japanese beetle feeding resulting in the common “window paning” of leaves. Photo courtesy of Eric Anderson.



Risk of white mold in soybean according to the Sporecaster app.

Wheat. Wheat straw has been harvested from almost all wheat fields in the region, and according to MSU wheat specialist Dennis Pennington, the same is true across the state. Yields have been all over the map based on soil moisture with irrigated fields reporting strong and even near-record yields. No reports of vomitoxin have come in, mainly due to dry conditions in late spring and early summer. Some reports of low falling numbers (seed sprouting prematurely on standing wheat) came in around the state.

Growers need to keep in mind how much nutrients are removed with the wheat grain and straw, not only when making fertilizer applications but also when pricing straw for sale.

Nutrient removal values for wheat grain and straw according to the [Tri-State Fertilizer Recommendations for Corn, Soybean, Wheat, and Alfalfa](#).

Grains	Unit	N ¹	P ₂ O ₅	K ₂ O	S ¹
Wheat (grain)	lb/bu	1.2	0.50	0.25	0.1
Wheat (straw)	lb/ton	15.2	3.70	29.0	5.4

¹ Nitrogen and sulfur removal rates taken from the [IPNI Nutrient Removal Calculator](#)



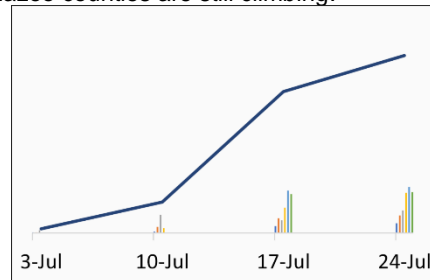
Large round bales of wheat straw in Ionia County. Photo courtesy of Eric Anderson.

Insects. Purdue’s western bean cutworm (WBC) counts for northern sites for the week ending July 19 were hit and miss, but Lake and LaPorte traps reported over 200 and 100 captures, respectively. However, those numbers dropped off significantly for the week ending July 26...we’ll have to wait and see whether we’ve seen peak flight yet. Traps in St. Joseph and Kalamazoo counties continued to rise this past week, and numbers from central Michigan are reportedly

approaching 100. For a refresher on scouting for WBC egg masses, check out [this MSU Extension article](#) or, for a deeper dive, you can watch the recording, “[Resurgence of Western Bean Cutworm](#)” with MSU field crop entomologist Chris DiFonzo from the Field Crops Webinar Series.

Moth counts in western bean cutworm (WBC) traps in St. Joseph and Kalamazoo counties are still climbing.

	3-Jul	10-Jul	17-Jul	24-Jul
WBC1	1	2	10	14
WBC2	1	9	21	25
WBC3	4	26	18	32
WBC4	0	7	36	57
WBC5			60	65
WBC6			55	58
Total	6	44	200	251



DiFonzo was not able to join the Virtual Breakfast this week as planned, but she did provide a “bug update” for us. Hatching of WBC has begun around the state. She recommends timing any insecticide applications that will be tank-mixed with a fungicide to optimize the fungicide since costs for those products are generally higher and WBC hatching is spread out and more difficult to pinpoint an “optimal” timing. Hard rains can wash young WBC larvae off which is good news. A question arose about a threshold of 120 cumulative moth captures in a single WBC trap, but she explained that threshold is only true for dry beans and not for corn. Since the females are only targeting pre-tassel corn, there may be high trap catches but little if any egg laying in a given corn field based on the growth stage.

Irrigation. Crop water use outpaced rainfall this past week prior to the storms on Wednesday. The first week of August is historically one of the warmest of the year with a corresponding high ET rate. A summary of crop coefficients and water needs for corn and soybean in the coming week is found in the table below with an estimated weekly FRET value of 1.5 inches.

Summary of rooting depth and crop water need for corn and soybean given a weekly evapotranspiration rate of 1.5 inches.

Crop stage	Crop coefficient (K _c)	Rooting depth (in)	% of Growing season	Water needed this week (in)
Corn				
V12	1.0	26	50	1.50
V14	1.1	28	55	1.65
V16-R5	1.2	30	60-80	1.80
Soybean				
R2	1.1	24	32	1.65
R3-R6	1.2	24	41-80	1.80

“**Precision Agriculture reveals profits and losses at high resolution**” was the topic of this week’s [MSU Extension Field Crops Virtual Breakfast](#) with Rich Price, MSU research assistant in Dr. Bruno Basso’s lab. Most farmers have the capability to generate yield maps from their monitors, and (hopefully) all know their cost of production for each crop in a given year. Price described the work being done in the Basso lab to bring those data together to create profitability maps that can help farmers make decisions about how to manage different parts of their fields.

Farmers who have generated yield maps over several years can track what parts of fields are low-yielding independent of the crop grown. Incorporating cost of production and calculating profitability will identify those areas of fields that continually lose money over time. The Basso lab has found instances where over \$200 per acre is lost each year in low-yielding areas. Farmers can then decide whether to make changes to those areas to improve profitability (improve fertility, reduce seeding rates) or, in many cases, choose to shift those areas into a perennial conservation planting (Conservation Reserve Program, pollinator habitat).



Profitability maps from three consecutive years in different crops (top), a combined profitability map across 12 years (lower left), and a low-yielding portion of a field planted to conservation species (lower right). Graphics courtesy of Rich Price.

The Basso lab has a project working with several farmers to generate profitability maps. They are then paying those farmers \$200 per acre to remove certain unprofitable areas from crop production and plant them to biological conservation areas. Among other things, the research involves calculating whole-field profitability after the land use change.

Some farmers comment that they question shrinking the crop production area as they suspect that wildlife feeding—often a main factor in low-profitability areas around field perimeters—will simply shift further into the high-profitability crop areas. The Basso lab is currently investigating this issue using trail cams and other methods of measurement.

Although the goal of the Basso lab is to produce an online platform where farmers can upload yield maps and cost of production information to generate profitability maps, this is not available yet. Reality is much more complex given different yield monitor types, file types, etc. Price says that service providers such as Corteva and Climate FieldView offer similar products with a subscription, but producers need to understand the potential for bias with a for-profit business. He said farmers interested in obtaining profitability maps can [contact him via email](#) to discuss the possibilities.

If you were not able to join the session, the recordings will be closed-captioned and available at the [Field Crops Virtual Breakfast](#) webpage and the MSU Extension Field Crops Team social media platforms: [Facebook](#), [Spotify](#), [YouTube](#), [Apple Podcasts](#) and [Twitter](#).

CALENDAR

(Note: titles are clickable links to online content when highlighted and underlined)

- Aug 3** [Virtual Breakfast – Identifying and Correcting Drainage Underperformance Issues with Ehsan Ghane.](#) 7-8am. Register online once for the entire series.
- Aug 8** [Tillage Field Day.](#) 8:30am-12pm. MSU Mason Research Farm, 1614 Okemos Rd, Mason, MI. Focus on different tillage implements and their impact on the soil. Open to the public, cost is free but registration is required.

- Aug 8** [Tillage In-Service](#). 12:15-4pm. MSU Mason Research Farm, 1614 Okemos Rd, Mason, MI. More in-depth discussions on tillage and soil health. Open to MAEAP technicians, Conservation District staff, MSU Extension staff, and other agencies. Cost is \$10, includes lunch, register online.
- Aug 18** [Farmland Preservation in Michigan](#). 9-11am. Van Buren Conference Center, 490 S Paw Paw St, Lawrence, MI. Learn & discuss hot topics in farmland use and protection: Farm transfer and succession; Land access and affordability; Investor and foreign ownership of farmland. Speakers from American Farmland Trust. RSVP by Aug 10. Contact [Julie Doll](#) from Michigan Agriculture Advancement with questions.
- Aug 22-23** [Beginner Grazing School](#). 10am – 4pm. MSU Lake City Research Center, 5401 W. Jennings Rd., Lake City, MI. Team of experts addressing wide range of topics. Cost is \$250 for one person, \$400 for two from same farm, or, \$550 for 3 from same farm. Fee includes grazing stick, all program materials, and all meals. Register online by Aug 18.
- Aug 23** [Southwest On-Farm Research Field Day](#). 8am-2pm. [70811 Lakeview Rd., Sturgis, MI 49091](#). See details in the description above. Register online by Aug. 17.

MSU Extension Digest Briefs

HELPING FARM FAMILIES TRANSITION THEIR FARM BUSINESS TO THE NEXT GENERATION

PUBLISHED ON JULY 27, 2023

Michigan State University Extension works to improve farm personnel well-being and income, expand agriculture-related businesses and increase employment opportunities, leading to agriculture being one of the strongest industries within Michigan.

MSU EXTENSION SUPPORTS AGRICULTURE'S NUTRIENT MANAGEMENT EFFORTS FOR CLEAN WATER

PUBLISHED ON JULY 27, 2023

Michigan State University Extension works to increase farmers' success while protecting the environment, ensuring food safety, reaching new markets and advancing agriculture through applied research.

MSU EXTENSION SUPPORTS EFFORTS TO IMPROVE WATER QUALITY IN IMPACTED WATERSHEDS

PUBLISHED ON JULY 24, 2023

The benefits of Michigan State University Extension's water quality efforts go beyond the state's borders by helping to maintain the integrity of the Great Lakes.

GRAIN BIN AND MANURE PIT SAFETY

PUBLISHED ON JULY 21, 2023

Providing Michigan farm families with grain bin and manure pit safety education helps prevent fatalities on their farms.

MICHIGAN STATE UNIVERSITY HOSTS 2023 BEGINNER GRAZING SCHOOL

PUBLISHED ON JULY 19, 2023

The Beginner Grazing School on Aug. 22-23 will answer questions on improving pastures, stock health and provide networking opportunities.

MSU AND POLLINATOR PARTNERSHIP HOST WORKSHOP ON POLLINATOR HABITAT FOR GREAT LAKES REGION FARMS

PUBLISHED ON JULY 14, 2023

Farmers, ranchers and producers can increase their knowledge of practices that both support pollinator conservation and benefit the health of agricultural lands.

WHAT IF THE FARM BILL PLC PROGRAM HAD A DECLINING PRICE CLAUSE?

PUBLISHED ON JULY 14, 2023

A potential new option to increase support provided by the Price Loss Coverage (PLC) program.

Southwest Michigan Field Crops Update – August 1, 2023 - 12

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