

## PROGRAM INFORMATION

**EQIP:** APPLICATIONS WILL CONTINUE TO BE APPROVED AS FUNDS BECOME AVAILABLE. **SIGNUP ANYTIME FOR 2022 FUNDS.**

**CSP:** GENERAL CSP APPLICATIONS CONTINUE TO BE APPROVED AS FUNDS BECOME AVAILABLE. **SIGN UP NOW FOR 2022 CSP FUNDS.**

**NSWCP:** NEW FUNDS COME JULY 1<sup>ST</sup> FOR ALL CONSERVATION PRACTICES. TO HAVE FIRST CHANCE AT IRRIGATION PRACTICE APPROVAL, **GET YOUR IRRIGATION APPLICATIONS IN BY AUG. 31<sup>ST</sup>.**

**ENERGY EFFICIENCY GRANT:** SIGNUP ANYTIME FOR 2022 FUNDS. **DEADLINE IS OCTOBER 31, 2021.** FOR MORE INFORMATION CONTACT KELLEY AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-455-9837 OR [KELLEY.MESSENGER@USDA.GOV](mailto:KELLEY.MESSENGER@USDA.GOV).

## CALENDAR OF EVENTS

**JULY 4: INDEPENDENCE DAY**

**JULY 5: INDEPENDENCE DAY OBSERVED – GOV'T OFFICES CLOSED**

**JULY 6: CNPPID BOARD OF DIRECTORS MEETING**

**JULY 11-15: KEARNEY COUNTY FAIR**

**JULY 13: TBNRD BOARD MEETING**

**JULY 25-29: PHELPS COUNTY FAIR**

**JULY 29-31: GOSPER COUNTY FAIR**

## NEW! Crop Water Use Information (ET)!

This year, you can get Crop Water Use (ET) information at the following website: <https://www.tribasinnrd.org/nawmn>. This ET information comes from the Nebraska Agricultural Water Management Network (NAWMN).

This website shows a map of all 14 NAWMN locations across the Tri-Basin NRD. It is updated each week and posts the previous weeks ET and the average daily ET for the previous week. There are brief instructions on how to simply make your own prediction for the upcoming week. It also provides the previous weeks rainfall at each site.

Each location posted has 4 crop stages for both corn and soybeans. You get to select the crop stage that matches your fields. ET from other locations have an average crop emergence date which may or may not match up with your crops. As you can see on page 3 of this newsletter, corn ranges from 6-leaf to 12 leaf stages. That can be as much as a 1 inch difference, plus or minus, depending upon the weather. This network gives you the opportunity to select your own crop stage.

**Enclosed with this newsletter is an example of the ET information that is posted each week on the website above. This ET information is also emailed each Monday, along with the map, to those who receive this newsletter via email and to others who wish to receive the ET information.**

CNPPID does have a link on their ET website that takes you directly to the website mentioned above. Crop Water Use (ET) resources are listed on page 3 of this newsletter. The NAWMN ET information is also listed on page 3 of each issue as well.

If you have any questions, call Curtis Scheele at 308-995-6121, Ext. 3 or email to [curtis.scheele@ne.usda.gov](mailto:curtis.scheele@ne.usda.gov).

## CURTIS'S COLUMN



United States Department of Agriculture

Natural Resources Conservation Service

### **REMINDER!!!**

#### Irrigation Recordkeeping for Program Participants:

A reminder for those producers receiving financial assistance through EQIP and CSP. **Below is a list of items that you need to be keeping track of during the irrigation season.** This information then needs to be submitted to your local NRCS office in order to receive your payments.

#### **Irrigation reporting requirements include:**

- i. Irrigation system flow meter readings at beginning and end of each irrigation water application.
- ii. Date and depth of each irrigation water application.
- iii. Crop growth stage and crop water use (ET).
- iv. Date and amount of each rainfall event.
- v. Available water content of the soil across the root zone.
- vi. Documentation of periodic irrigation decisions.
- vii. Field location(s) of soil moisture monitoring site(s) with an explanation of why each site was chosen.
- viii. Soil moisture content displayed in graphical format for each sensor across the root zone along with an end of season summary graph, which are both clearly labeled with pertinent soil / water relationship information that includes:
  1. Soil moisture readings as a percentage of available water content over time.
  2. A line that identifies Field Capacity.
  3. A line that identifies the producer defined maximum allowable depletion (MAD).

### **REMINDER!!!**

#### Leaf Tissue Samples

For **CSP contract holders** who need to complete corn leaf tissue samples as a part of your CSP requirements for your 2020 payment, now would be a good time to start planning for this. The following are guidelines:

- **1 leaf sample per 40 acres or less per management system.**
- **Samples taken prior to tassel.**
- **15-20 plant leaves per sample.**
- **Sample leaves are ear shoot leaves. If samples prior to ear shoot leaf, samples will be the youngest mature leaf (top leaf with a collar).**
- **Dirty/dusty samples should be lightly rinsed. Over-rinsing can leach out soluble nutrients.**
- **Samples should be air dried or placed in a paper bag for shipping.**
- **Contact your lab for additional information on sampling and analysis.**

**Data Shows Groundwater Decline:**

Recent data obtained from observation wells in the Central Nebraska Public Power & Irrigation District's irrigation area looked at trends over three different time periods. The 2021 water level observations were compared with readings from last spring, the spring of 2011 and average groundwater levels for the period 1981-85.

In general, data shows groundwater declines over all three periods. Since last spring, 81 percent of measured wells have shown declines with 50 percent of those wells dropping by up to three feet. Over the past ten years, 61 percent of the wells have declined with about 22 percent showing a drop of more than six feet. The comparison of 2021 spring groundwater levels with the 1981-85 period average indicates that 59 percent of the wells have dropped, with 36 declining by up to five feet.

The observed declines appear to be evenly distributed across Kearney, Phelps and Gosper counties, except for the area around Elwood Reservoir where increases of three feet or more over the past ten years have occurred.

Find us at [www.cnppid.com](http://www.cnppid.com) or @CNPPID on Facebook, Instagram, Twitter and LinkedIn.

**TRI-BASIN NRD NEWS****Groundwater Management Reminders:****Groundwater Quantity Management (Water Use)**

- Check to see that your meters are working properly and notify the NRD if they are not.
- **Union Township Reminder:** 2021 is the first year of the new allocation period. If you have questions about these requirements or reports, call Tammy at our office at 308-995-6688.

**Groundwater Quality Management (Nitrogen Management/GMA)**

- **Phase II & III:** Water samples should be in July or August for 2022 Nitrogen Management Crop Reports. If you have questions about these requirements or reports, call Pat at our office at 308-995-6688.
- **Water Quality Sampling:** You might see NRD Staff collecting water samples around the district.

**Chemigation**

- We are currently scheduling chemigation inspections for new and routine inspections. Inspections are required every three years in the Tri-Basin NRD for your system to remain renewable.

If you have problems with your system or make any changes, contact the NRD to have it inspected. If you have questions about these requirements or reports, call Sasha at our office at 308-995-6688.

**Fertigating Corn and Soybeans:**

Fertigation is a 'spoon-feeding' fertility system to provide crop nutrients through irrigation water. Since plants actually receive extra fertilizer, based on their growth stage needs, nitrogen-use efficiency increases. Environmental stewardship is potentially improved as well with less nutrient leaching into the groundwater.

Newer corn hybrids are now bred to require more nitrogen later in the growing season, so later season fertilizing systems can provide yield benefits. University studies document that new hybrids are now taking up 29% more nitrogen post-flowering compared to previous corn breeding.

Corn fertigators usually schedule up to four applications per growing season with 30-40 lbs. of nitrogen/acre/application with at least ¼ inch of water. However, maximum rates may expand to 50-60 lbs N per acre if excessive rainfall limits irrigation events. However, nutrient-usage efficiency may be reduced.

In-season plant sensors can further improve fertigation efficiency. Sensor equipment such as drones, aerial satellite and on-the-go infra-red sensors may improve application rates decisions.

Fertigation can also benefit soybeans; since these plants require 4-5 lbs. of N per bushel of production. When irrigators seek higher yields, added nitrogen during early pod set may provide yield boost. The challenge is that soybeans are opportunistic and decrease their nitrogen fixing if mineralized N is already readily available. So, early N applications in the growing season usually do not increase yields. Rather, fertigation should be timed for peak nitrogen demand. For soybeans, highest N need is growth stage (R3) when the plants are beginning pod development. Recommended nitrogen rates are 20-40 lbs. N per acre at reproduction growth stage R3.

**2021 Free Insect Light Trap Date Available:**

The UNL Entomology Department is again providing free black light trapping data at four locations. Tri-Basin irrigators will likely utilize the West Central Research & Extension Center at North Platte collection site or the South Central Agricultural Lab at Clay Center location. Online light trapping data is reported mid-May through September (Monday-Friday). Visit: <https://entomology.unl.edu/agroecosystems/black-light-trap-data>

\*Although insect treatment decisions cannot be made on the basis of light trap data, black light data monitoring can provide early warning of potential pest problems.

**2021 Farmland and Cash Rental Values:**

Final Nebraska Farm Real Estate will be posted online soon. Tri-Basin irrigation land values are posted under the "South" region in Nebraska. Preliminary market values for center pivot irrigated acres are projected to have increased 8% statewide compared to 2020.

Preliminary average center pivot irrigated cropland values will likely peg \$6,885 per acre (+ 6% compared to 2020). Cash rental rates for center pivots may range from \$190-\$235 per acre (+7%).

Preliminary average gravity irrigated cropland values will likely be \$5,735 per acre (+5% compared to 2020). Cash rental rates for gravity irrigated may range from \$175-\$245 /A (+2%).

Preliminary average dryland (rainfed) farmland rental values will likely range from \$57-\$120 per acre (+10%). While pasture rental values will likely range from \$28-\$46 per acre (+4%).

Final values will be available soon on the Nebraska Farm Real Estate website: <https://agecon.unl.edu/realestate>.

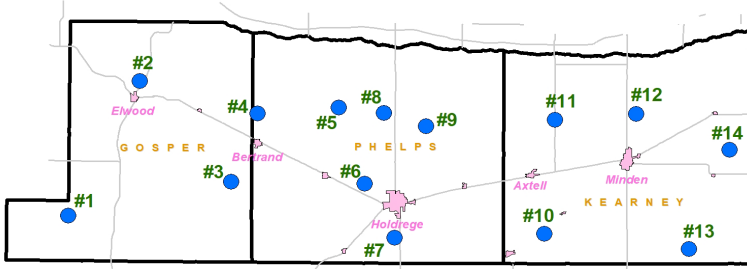
## TBAWMN CROP ET INFORMATION

Additional Information and other ET resources can be found at websites listed under "Crop ET Information" below.

Inches of Crop Water Use (ET) =

Evaporation x K<sub>c</sub>

Site	June 7 – June 13		June 14 – June 20	
	Evaporation	Rain	Evaporation	Rain
1	2.30	0.11	3.00	0.93
2	2.10	0.15	2.20	0.10
3	2.20	0.12	2.50	1.00
4	2.10	0.05	2.30	0.15
5	2.20	0.04	2.30	0.35
6	2.20	0.03	2.50	0.87
7	2.10	0.04	2.30	1.00
8	2.10	0.02	2.10	0.24
9	2.40	0.01	2.40	0.68
10	2.00	0.01	2.40	0.61
11	2.30	0.01	2.50	0.75
12	2.00	0.00	2.50	0.41
13	2.30	0.00	2.50	0.40
14	2.30	0.00	2.00	0.38



**2021 Map of NAWMN Sites across the Tri-Basin NRD.**

Crop Coefficients (K <sub>c</sub> )			
Corn		Soybeans	
Stage	K <sub>c</sub>	Stage	K <sub>c</sub>
2 leaf	0.10	Cotyledon	0.10
4 leaf	0.18	1st Node	0.20
6 leaf	0.35	2nd Node	0.40
8 leaf	0.51	3rd Node	0.60
10 leaf	0.69	Beg. Bloom	0.90
12 leaf	0.88	Full Bloom	1.00
14 leaf	1.01	Beg. Pod	1.10
16 leaf	1.10	Full Pod	1.10
Silk – Beg. Dent	1.10	Beg. Seed	1.10
¼ Milk Line	1.04	Full Seed	1.10
Full Dent (½ Milk)	0.98	Yellow Leaf	1.00
¾ Milk Line	0.79	Beg. Mat.	0.90
Black Layer	0.60	Full Mat.	0.20
Full Maturity	0.10	Mature	0.10

### CROP STAGE INFORMATION

**Corn (V6-6 Leaf to V12-12 Leaf stage):** V15 is the beginning of the most crucial period of plant development in terms of seed yield. R1 (Silking) is the most crucial period.

Avg. daily water use from June 14 – June 20 was 0.11"-0.32".

**Soybeans (V3-Third Node to R1-Beginning Bloom stage):** Environmental stress from Beg. Bloom through Full Seed will reduce yields more than any other time. Full Pod is the most crucial period. Vertical root growth increases sharply at Beg. Bloom.

Avg. daily water use from June 14 – June 20 was 0.18"-0.32".

June 14-June 20 (14 of 14 NAWMN sites reporting): Average weekly rainfall was 0.56 (range 0.10 to 1.00). Average weekly ET for corn was 1.48 and for soybeans was 1.84.

### CROP ET INFORMATION

**NAWMN Sites:**

Tri-Basin NRD: <https://www.tribasinnrd.org/nawmn>

Email: Contact Curtis at 308-995-6121, Ext. 3

**CropWatch:** <https://cropwatch.unl.edu/gdd-etdata>

**CNPPID:** <https://www.cnppid.com/weather-et-data/>

**Texting:** Contact TBNRD at 308-995-6688

**Email:** Contact CNPPID at 308-995-3555

CORN STAGE		DESCRIPTION
V6	6 Leaves	Leaf stage is defined by number of leaves with visible collars. The collar is a discolored line where the leaf meets the stalk. This line circles the stalk. <b>TIP:</b> Mark the 6th leaf or a higher leaf by cutting a notch in it or some other way so as to know that leaf number. Reason is the lower leaves will be lost as the plant develops. Flag or somehow mark the plant in the field as a reference plant when determining later leaf (vegetative) stages.
V10	10 Leaves	
V14	14 Leaves	
SOYBEAN STAGE		DESCRIPTION
V4	4th Node	V4 has 4 nodes on the main stem with 4 trifoliates. (5 nodes total = 1 unifoliolate + 4 trifoliates)
R1	Beginning Bloom	At least one open flower is present at any main stem node.
R2	Full Bloom	At least one open flower is present at any one of the two uppermost main stem nodes that have fully developed leaves.

## LAKE AND RIVER LEVELS

CNPPID Reservoir Elevation and Platte River Flow data listed below and other locations can be found on CNPPID's website at <http://cnppid.com/wp-content/uploads/2016/06/lakeRiverData.html>.

	June 23, 2021, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	73.5%	NA
Inflows to Lake McConaughy	360 cfs	743 cfs
Flows on the North Platte at North Platte	1570 cfs	1530 cfs
Flows on the South Platte at North Platte	655 cfs	198 cfs
Flows on the Platte at Overton	1370 cfs	2090 cfs

**Happy  
Birthday  
America!**



## WEBSITES OF INTEREST

NRCS Nebraska [www.ne.nrcs.usda.gov](http://www.ne.nrcs.usda.gov)  
 Farm Service Agency [www.fsa.usda.gov/](http://www.fsa.usda.gov/)  
 TBNRD Home Page [www.tribasinrrd.org/](http://www.tribasinrrd.org/)  
 Central Irrigation District [www.cnppid.com/](http://www.cnppid.com/)  
 HPRCC [hprcc.unl.edu/](http://hprcc.unl.edu/)  
 UNL Cropwatch [cropwatch.unl.edu/](http://cropwatch.unl.edu/)  
 UNL Extension [extensionpubs.unl.edu/](http://extensionpubs.unl.edu/)  
 K-State SDI Website [www.ksre.ksu.edu/sdi](http://www.ksre.ksu.edu/sdi)  
 No-till On The Plains [www.notill.org](http://www.notill.org)  
 Soil Health: [www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/)  
 NE State Irrig Assoc [www.nebraskastateirrigationassociation.org/](http://www.nebraskastateirrigationassociation.org/)

## RAINFALL

Rainfall amounts listed below and other locations come from NeRAIN which can be found at website <https://nednr.nebraska.gov/NeRain/Maps/maps>.

Location:	June 10 – June 23	May 1 – June 23
Elwood 0.26 mi. S:	0.17	4.97
Bertrand 6.1 mi. SE:	1.04	7.64
Holdrege 0.99 mi. E:	0.04	3.68
Minden 7.2 mi. W:	0.70	5.96
Minden 5.8 mi. E:	0.30	5.47

**Average Rain for May-June in Holdrege = 8.04 Inches**

\*\*\* If you wish to receive this newsletter via e-mail, or have any questions, comments or ideas, feel free to contact Curtis Scheele at the NRCS office in Holdrege or you can email him at [curtis.scheele@usda.gov](mailto:curtis.scheele@usda.gov). \*\*\*

### USDA - Natural Resources Conservation Service

1609 Burlington Street  
 PO Box 798  
 Holdrege, NE 68949-0798  
 308-995-6121, Ext. 3

309 Smith Street  
 PO Box 41  
 Elwood, NE 68937-0041  
 308-785-3307, Ext. 3



1005 South Brown Street  
 Minden, NE 68959-2601  
 308-832-1895, Ext. 3

### Central Nebraska Public Power & Irrigation District

415 Lincoln Street  
 PO Box 740  
 Holdrege, NE 68949  
 308-995-8601



### Tri-Basin Natural Resources District

1723 Burlington Street  
 Holdrege, NE 68949  
 308-955-6688



### Nebraska Extension

1308 2<sup>nd</sup> Street  
 Holdrege, NE 68949  
 308-995-4222



PO Box 146  
 Elwood, NE 68937  
 308-785-2390

424 North Colorado  
 PO Box 31  
 Minden, NE 68959  
 308-832-0645

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### Crop ET for the Past Week of June 14 - June 20

		CORN			SOYBEAN		
Location	Rainfall Inches for Past Week	Average Crop Stage	Weekly ET for Past Week	Average Daily ET for Past Week	Average Crop Stage	Weekly ET for Past Week	Average Daily ET for Past Week
Site #1 Arapahoe 7 Northwest	0.93	V6 - 6 Leaf	1.05	0.15	V4 - 4th Node	1.95	0.28
		V9 - 9 Leaf	1.80	0.26	V6 - 6th Node	2.25	0.32
		V12 - 12 Leaf	2.64	0.38	R1 - Beginning Bloom	2.70	0.39
		V14 - 14 Leaf	3.03	0.43	R2 - Full Bloom	3.00	0.43
Site #2 Elwood 1 North	0.10	V6 - 6 Leaf	0.77	0.11	V4 - 4th Node	1.43	0.20
		V9 - 9 Leaf	1.32	0.19	V6 - 6th Node	1.65	0.24
		V12 - 12 Leaf	1.94	0.28	R1 - Beginning Bloom	1.98	0.28
		V14 - 14 Leaf	2.22	0.32	R2 - Full Bloom	2.20	0.31
Site #3 Bertrand 4 Southwest	1.00	V6 - 6 Leaf	0.88	0.13	V4 - 4th Node	1.63	0.23
		V9 - 9 Leaf	1.50	0.21	V6 - 6th Node	1.88	0.27
		V12 - 12 Leaf	2.20	0.31	R1 - Beginning Bloom	2.25	0.32
		V14 - 14 Leaf	2.53	0.36	R2 - Full Bloom	2.50	0.36
Site #4 Bertrand 3 North	0.15	V6 - 6 Leaf	0.81	0.12	V4 - 4th Node	1.50	0.21
		V9 - 9 Leaf	1.38	0.20	V6 - 6th Node	1.73	0.25
		V12 - 12 Leaf	2.02	0.29	R1 - Beginning Bloom	2.07	0.30
		V14 - 14 Leaf	2.32	0.33	R2 - Full Bloom	2.30	0.33
Site #5 Loomis 7 North	0.35	V6 - 6 Leaf	0.81	0.12	V4 - 4th Node	1.50	0.21
		V9 - 9 Leaf	1.38	0.20	V6 - 6th Node	1.73	0.25
		V12 - 12 Leaf	2.02	0.29	R1 - Beginning Bloom	2.07	0.30
		V14 - 14 Leaf	2.32	0.33	R2 - Full Bloom	2.30	0.33
Site #6 Holdrege 3 Northwest	0.87	V6 - 6 Leaf	0.88	0.13	V4 - 4th Node	1.63	0.23
		V9 - 9 Leaf	1.50	0.21	V6 - 6th Node	1.88	0.27
		V12 - 12 Leaf	2.20	0.31	R1 - Beginning Bloom	2.25	0.32
		V14 - 14 Leaf	2.53	0.36	R2 - Full Bloom	2.50	0.36
Site #7 Holdrege 4 South	1.00	V6 - 6 Leaf	0.81	0.12	V4 - 4th Node	1.50	0.21
		V9 - 9 Leaf	1.38	0.20	V6 - 6th Node	1.73	0.25
		V12 - 12 Leaf	2.02	0.29	R1 - Beginning Bloom	2.07	0.30
		V14 - 14 Leaf	2.32	0.33	R2 - Full Bloom	2.30	0.33
Site #8 Holdrege 9 North	0.24	V6 - 6 Leaf	0.74	0.11	V4 - 4th Node	1.37	0.20
		V9 - 9 Leaf	1.26	0.18	V6 - 6th Node	1.58	0.23
		V12 - 12 Leaf	1.85	0.26	R1 - Beginning Bloom	1.89	0.27
		V14 - 14 Leaf	2.12	0.30	R2 - Full Bloom	2.10	0.30
Site #9 Holdrege 7 Northeast	0.68	V6 - 6 Leaf	0.84	0.12	V4 - 4th Node	1.56	0.22
		V9 - 9 Leaf	1.44	0.21	V6 - 6th Node	1.80	0.26
		V12 - 12 Leaf	2.11	0.30	R1 - Beginning Bloom	2.16	0.31
		V14 - 14 Leaf	2.42	0.35	R2 - Full Bloom	2.40	0.34
Site #10 Wilcox 4 Northeast	0.61	V6 - 6 Leaf	0.84	0.12	V4 - 4th Node	1.56	0.22
		V9 - 9 Leaf	1.44	0.21	V6 - 6th Node	1.80	0.26
		V12 - 12 Leaf	2.11	0.30	R1 - Beginning Bloom	2.16	0.31
		V14 - 14 Leaf	2.42	0.35	R2 - Full Bloom	2.40	0.34
Site #11 Axtell 6 Northeast	0.75	V6 - 6 Leaf	0.88	0.13	V4 - 4th Node	1.63	0.23
		V9 - 9 Leaf	1.50	0.21	V6 - 6th Node	1.88	0.27
		V12 - 12 Leaf	2.20	0.31	R1 - Beginning Bloom	2.25	0.32
		V14 - 14 Leaf	2.53	0.36	R2 - Full Bloom	2.50	0.36
Site #12 Minden 5 North	0.41	V6 - 6 Leaf	0.88	0.13	V4 - 4th Node	1.63	0.23
		V9 - 9 Leaf	1.50	0.21	V6 - 6th Node	1.88	0.27
		V12 - 12 Leaf	2.20	0.31	R1 - Beginning Bloom	2.25	0.32
		V14 - 14 Leaf	2.53	0.36	R2 - Full Bloom	2.50	0.36
Site #13 Norman 8 Southwest	0.40	V6 - 6 Leaf	0.88	0.13	V4 - 4th Node	1.63	0.23
		V9 - 9 Leaf	1.50	0.21	V6 - 6th Node	1.88	0.27
		V12 - 12 Leaf	2.20	0.31	R1 - Beginning Bloom	2.25	0.32
		V14 - 14 Leaf	2.53	0.36	R2 - Full Bloom	2.50	0.36
Site #14 Heartwell 4 Southeast	0.38	V6 - 6 Leaf	0.70	0.10	V4 - 4th Node	1.30	0.19
		V9 - 9 Leaf	1.20	0.17	V6 - 6th Node	1.50	0.21
		V12 - 12 Leaf	1.76	0.25	R1 - Beginning Bloom	1.80	0.26
		V14 - 14 Leaf	2.02	0.29	R2 - Full Bloom	2.00	0.29