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water spouts

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Upcoming 2021 NDSU Field Days

Details for the field day at each location listed below will be posted to their websites sometime in June.

- July 13 Hettinger Research Extension Center
- July 14 Dickinson Research Extension Center
- July 14-15 Williston Research Extension Center
- July 19 Agronomy Seed Farm, Casselton
- July 20 Carrington Research Extension Center
- July 21 North Central Research Extension Center, Minot
- July 22 Langdon Research Extension Center
- July 27 Central Grasslands Research Extension Center, Streeter

Links to the website for each Research Extension Center can be found at:
<https://www.ag.ndsu.edu/research/research-extension-centers>.

Welcome

The 2021 water year (which started in October 2020) began as a drought for much of the state, and this spring, the drought is continuing. Unlike the fall of 2019, rain during the fall of 2020 was below average for most of North Dakota. Plus, we received below-average snow throughout the winter.

I am sure many irrigators already have started their systems to aid germination. Typically, rain received during May and June supplies about 65% of our growing season precipitation, so let's hope we have an average growing season with timely rain.

Last December, we conducted a virtual irrigation workshop that focused on remote sensing, soil moisture monitoring and variable-rate irrigation. I think it was very successful because we were able to have guest speakers from Nebraska and Colorado, along with local speakers with valuable skills in these areas.

If you were not able to participate, Zoom recordings of the presentations, along with the PowerPoint presentations, can be viewed at www.ndwaterconvention.net/schedule.

Scroll down to Dec. 15 and 16, where you will find the links to the presentations.

Have a great growing season and remember to take care of your irrigation system. Doing required maintenance now can prevent breakdowns that could occur during the critical crop development and fruiting stages.

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Is Your Irrigation System Ready for a Long, Hot Summer?

With the early drought, your irrigation equipment may end up with more hours of operation this growing season than at any time in the last 30 years. Irrigation equipment is no different than other crop production equipment. If not properly cared for, it may fail at the time it is most needed.

Fixing small problems is less expensive than fixing a major breakdown in July or August. Repairs should be made early in the season when the crop water demands are low (before June 15). If the irrigation system components were checked last fall, then early season maintenance should require only checking to see that no damage occurred during the winter.

Items to look at before the irrigation season are the operation of the pump, motor (or engine), electrical control boxes, piping and distribution system (sprinkler system, gated pipe, etc.). During the winter, rodents, dirt and water do the most damage to electrical and mechanical components. If you don't feel confident performing routine irrigation system maintenance or you don't have the time, most irrigation dealers offer an annual service contract.

Check electrical motors, phase converters and control panels

Before starting your irrigation system for the first time, check the condition of the control panels and pumping equipment. To begin, make sure the electrical power is **locked in the OFF position** at the main disconnection point. You always should use extreme caution when working around electrical power boxes and machinery. If you are not sure the power is off, use a voltmeter to measure and make sure it is disconnected.

Open all electrical covers and examine for dirt, rodent damage, leaking door seals and loose or damaged wires, and ensure that the grounding wire is properly connected to the panel box and the grounding rod.

For center pivots, making sure the pivot point is properly grounded is very important. Last year, an electrocution fatality occurred (in another state) due to a broken ground connection at a pivot point.

Examine any relays with exposed contacts. Moisture condensation may cause corrosion that will make the contacts remain open or stick together. Be sure all switches operate freely. If moisture is present, remove it and leave the box open until it dries.

Rodents often cause significant damage to electrical components. If you see evidence of rodent damage, find the entry hole and plug it. This is especially important this year because rodents were looking for any enclosed space to make their nests due to a lack of snow cover.

Electric motors and phase converters, including enclosed variable-frequency drives (VFDs), are especially susceptible to dust and moisture accumulation. High winds can deposit snow and fine dust inside presumably sealed boxes. Phase converters, especially

the static type, should be cleaned thoroughly with compressed air, and use a high-quality electrical contact cleaner on relay contacts.

Check the piping and sprinkle tems

Visually inspect the piping between the pump and the distribution system (center pivots, lateral moves, big guns or gated pipe). Check all the air release valves to make sure they work. Replace broken pressure gauges. Check all valves to make sure they open and close properly.

Check the owners manual for specific maintenance items. If you do not have an operators manual, get one from a dealer or the manufacturer. If the sprinkler system is relatively new, determine what service is required to keep the warranty in effect. Also, determine any other service the manufacturer suggests before the system is put into operation each year.

On center pivots, check the gearbox lubricant level on each tower drive, drain off moisture and refill with approved lubricant or change the lubricant if discolored. Lubricate all fittings, joints, bearings and the pivot point.

Check inflation pressure on all tires. Improper inflation can cause tire breakdown and also may place stress on the drive system. Open the collector ring cover and inspect the brushes and contacts. The sprinkler heads should be checked thoroughly for damage.

Finally, remove the end cap from the center pivot. For electric and oil drive center pivots and lateral moves, start the machine and run dry. **For the individual tower boxes, do the following:**

- Do a visual check, clean any contact corrosion with high-quality sandpaper or emery cloth and apply cleaner.
- Freeze/thaw cycles cause electrical contacts to loosen. Check and tighten all connection screws. Repair or replace any damaged or broken wires.

Now that you have completed the dry walk-through of the irrigation system, start the pump and put some water through it. **However, don't stand in front of the main electrical panel when starting the system for the first time. Stand to the side of the panel.**

Check the pump and well performance

Assuming you have performed a "dry walk-through" of the irrigation system, turn on the pump. Listen for any unusual sounds. When the system comes up to pressure, if your flow meter works, record the flow rate and pivot pressure.

Compare these readings with past records or the initial design parameters. If the flow rate and pressure are the same as in previous years, you can assume the pump and well are in good condition.

Also, record the numbers on the totalizer of the flow meter. Do the same at the end of the irrigation season and you will know how much water was pumped for reporting to the North Dakota State Water Commission.

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Irrigation a Hot Topic for the State Legislature and Congress

The 2021 legislative session ended its main run in the wee hours of the morning on April 30. The session lasted 76 days.

Under the state constitution, the Legislature cannot meet for more than 80 days unless called into special session by the governor. The Legislature plans on meeting again this fall to establish new legislative districts based on new population figures from the U.S. Census Bureau and the allocation of federal dollars coming to the state as a result of the COVID-19 pandemic.

In addition to meeting again this fall, the Legislature will continue its work this summer via several study committees. Many complex policy issues are raised during a legislative session that merit additional study before a legislative solution is proposed and considered by the full legislative body.

The time between legislative sessions is referred to as the "interim." For this interim, many important issues will be studied by legislative committees. In fact, more than 70 different topics have been proposed for interim study. Legislative leadership will meet early this summer to prioritize and pick which topics will be studied.

The increase in drought conditions throughout the 2021 legislative session increased the interest in irrigation for some legislators. The North Dakota Irrigation Association had the opportunity to meet with a number of legislators and staff in the office of the state engineer to discuss the irrigation permitting process in North Dakota. These conversations led to the inclusion of irrigation and water permits in the comprehensive water study that likely will take place during the interim.

The Irrigation Association will be actively involved in the study during the interim and nominated vice chairman Steve Hansen to sit as a voting member on the study committee. We are hopeful he will be selected. We anticipate a desire by the study committee to examine the process for applying for, approving and maintaining irrigation permits.

The Legislature also proposed an interim study of the taxation of potato or grain warehouses. The state has striking disparities in how privately owned warehouses situated on commercial property are taxed depending on the county where the property is located. Should this topic be selected for study, the Irrigation Association will monitor its progress and possible resulting legislation.

The North Dakota office of the state engineer and the State Water Commission, who collectively oversee water at the state level, will undergo a reorganization this summer. House bill 1353 authorized the reorganization into a newly created Department of Water Resources. The director of the new department will be a member of the governor's cabinet.

While many of the details of the reorganization remain unknown, the state engineer will retain traditional authority over the regulatory aspects of the new department, including dam safety, water appropriation and drainage permits. The makeup and role of the 10-member State Water Commission will not change.

While numerous policy conversations will be available for participation in North Dakota during the next few months, the Irrigation Association also will be engaged in conversations in Washington, D.C.

In early May, the North Dakota congressional delegation introduced legislation to expand project use power to additional irrigation districts acquiring water from the Missouri River. Eligible districts would receive power at a much-reduced cost, making irrigation much more cost effective. The availability of project use power to districts is part of the federal government's promise to compensate North Dakota for land that was lost due to the damming of the Missouri River in the last century.

Whether in Bismarck or Washington, D.C., the Irrigation Association will continue to work with policymakers at all levels of government to pass and implement thoughtful legislation to advance irrigation in North Dakota.

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County commissions, North Dakota State University and U.S. Department of Agriculture cooperating.

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This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.

North Dakota Water Education Foundation – Summer Water Tours

Access to substantial quantities of clean water is important for the developments in North Dakota, and the best way to learn about water projects is to see them in person via a tour.

These tours provide a firsthand look at North Dakota's critical water issues. Registration is \$20 per person and includes tour transportation, meals, refreshments, informational materials and a one-year subscription to *North Dakota Water* magazine.

Tours offered are:

- June 16 **Devils Lake Area**
(Tour begins and ends in Devils Lake)
- June 24 **Managing Water in Agriculture and Industry**
(Tour begins and ends in West Fargo and includes stops for tile drainage)
- June 29 **Missouri River Expedition**
(Tour begins and ends in Mandan and includes stops at irrigation facilities)

- July 15 **Red River of the North: Simply Grand**
(Tour begins and ends in Grand Forks)
- July 20 **Fargo-Moorhead Area Diversion Project**
(Tour begins and ends in Fargo)
- July 27 **Managing Water Through Garrison Diversion**
- Aug. 10 **Managing the Mighty Mouse**
(Tour begins and ends in Minot)

For more information about each tour, go to <https://ndwater.org/events/summer-water-tours/> or send a check made out to NDWEF and mail to PO Box 2254, Bismarck, ND 58502. Please indicate which tour or tours you want to attend and include the number of people. For more information, give us a call or send an email.

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