

NeDNR Hosts Conference about Integrated Water Resources Management

By Andy Pedley

On March 25th-27th, NeDNR hosted the American Water Resources Association's (AWRA) 2019 Spring Specialty Conference in Omaha entitled "Setting Conditions for Success in Integrated Water Resources Management." This national conference brought together 113 professionals and students from all over the U.S. to learn and share about Integrated Water Resource Management (IWRM). In total, 65 presenters, including 32 from Nebraska, contributed to discussion on topics such as water policy, collaboration, science and technology, and community engagement. A conference program with a full list of presentations and presentation abstracts can be found at

<https://awra2019springconference.secure-platform.com/a/page/Technical>

In addition to NeDNR's role as host for the event, Water Planning Coordinator Amy Zoller served as general conference co-chair and was responsible for much of the event

planning. Assistant Director Jesse Bradley served as technical program co-chair, and Water Planning Division Manager Jennifer Schellpeper served as the finance/exhibits co-chair. NeDNR staff members also served as presenters, moderators, panelists, and speakers throughout the conference.

The conference opening plenary featured Tony Willardson, Executive Director for the Western States Water Council, speaking on "Governing with Imagination: Managing the Unmanageable," and a "Welcome to Nebraska" address by NeDNR Director Jeff Fassett. In addition,

opening remarks were provided by Lisa Beutler (AWRA's president), Dresden Farrand (AWRA's executive vice-president), and general conference co-chairs Amy Zoller and Mike Antos (Figure 1).

NeDNR staff presentations covered a wide range of IWRM-related topics, revealing the cutting-edge work that is being done in Nebraska. Planning and policy presentations included a history of IWRM in Nebraska, collaborations in the Republican River Basin, development and implementation of a public



NeDNR Director Jeff Fassett



AWRA Conference Continued



Left to Right: Dresden Farrand, AWRA Executive Vice President; Amy Zoller, conference co-chair and Integrated Water Planning Coordinator at NeDNR; Lisa Beutler, AWRA President; Mike Antos, conference co-chair and Senior Integrated Water Management Specialist at Stantec Consulting Services, Inc.

participation plan for the Upper Platte Basin-Wide Plan, and the joint water quality and quantity planning currently underway in the Upper Big Blue Natural Resources District. Technical presentations covered data management and IWRM modeling, aquifer recharge and flood control conjunctive management projects, and the implementation of a decision support system for excess streamflow. All of the presentations by NeDNR staff are available on the NeDNR webpage, under "General Presentations" for 2019 on <https://dnr.nebraska.gov/water-planning/publications-and-presentations>.

On a final note, AWRA selected one of NeDNR's conference presentation topics for publication in a special IWRM edition of AWRA's *IMPACT* magazine. Water Planning's Carol Flaute, Sara Nevison, and Jennifer Schellpeper authored an article, entitled "Legislation Supporting IWRM in Nebraska," which appears in the May 2019 issue of *IMPACT* (Figure 2) and is available under "Other Publications" on <https://dnr.nebraska.gov/water-planning/publications-and-presentations>.

NeDNR Participates in Food Drive

By Madeline Hoffer

NeDNR, along with the other agencies in state government, collected food and funds in support of the Food Bank of Lincoln from April 8th-19th. The Food Bank of Lincoln assists food insecure people around the Southeast Nebraska area. NeDNR held a number of activities to encourage participation in the food drive, including Food BINGO, guessing the number of candies in a jar, and themed giving days. In total, NeDNR collected 166 items of food and personal care supplies and \$102 in cash.



Water Planning Division Celebrates Five Graduates

The Water Planning Division of NeDNR is honored to recognize Melissa Mosier for earning a master's degree from the University of Nebraska--Lincoln (UNL), as well as four college interns who also graduated from UNL this spring. Read on to learn more about each graduate.

Melissa Mosier, an Integrated Water Management Analyst, has worked at NeDNR for six years. She recently earned a Master of Science degree from UNL's School of Natural Resources, with a specialization in Human Dimensions and a minor in Water Resources Planning and Management.

Her thesis, entitled "The Niobrara National Scenic River: Exploring Co-Management Through a Case Study of the Niobrara Council," focuses on the Niobrara Council, a partnership of local, state, and federal representatives charged with cooperatively managing the reach of the Niobrara River that was federally designated under the Wild and Scenic Rivers Act in 1991. Her thesis project's purpose was to explore the co-management framework of the Council using a qualitative methodology that investigated the functional tasks of the Council. She analyzed the linkages between those tasks and the individuals who performed them to develop a descriptive picture of how the Council functions.

Melissa enjoys camping and kayaking with her friends and family. Her coworkers are especially proud of her accomplishments and look forward to continuing to work together. Way to go Melissa!

Danielle (Dani) Bischoff interned at NeDNR Water Planning Division for almost two years as an Integrated Water Management Planner Assistant. She recently graduated with a B.A. in English and Communication from UNL.

Dani, aka "soup" by her brother (no reason), loves compelling narratives, whether in the form of a book, podcast or visual media. She finds inspiration from her positive and loving parents, especially when taking courses in Macroeconomics. We thank Dani for her service, and wish her well in the future as she moves on to the next phase of her career.



Continued on Page 4

Graduates Continued



Anna Cole interned at NeDNR Water Planning Division for one year as an Integrated Water Management Specialist Assistant. Anna recently graduated from UNL with a B.S. in Civil Engineering with Distinction. She ran groundwater and surface water models to perform hydrologic analyses and was heavily involved with the Robust Review for the Upper Platte River Basin.

Her hobbies include anything creative: painting, drawing, origami, and design work. She has accepted a job at Olsson, in the Lincoln office, as an Assistant Engineer. She will be part of their Power Delivery team, designing substations and transmission and distribution power lines. She shared that one thing that surprised her about her college career was the great variety of paths she could take to have a beneficial impact in her future endeavors. She has found a true passion for civil engineering and the ways it can improve citizens' lives. Good luck Anna!

Nicole Smith interned at NeDNR Water Planning Division for one year as an Integrated Water Management Specialist Assistant, where she tested the differences between QGIS and ArcGIS and worked on a mapping project where she made almost 200 maps for the Upper Loup NRD. Nicole recently graduated with B.S. degrees in Environmental Studies and Geology with a minor in Mathematics from UNL, and has been accepted to begin studies in Environmental Engineering under the Civil Engineering graduate program at UNL in the fall.



Nicole, aka "Kolie" by her friends, finds inspiration from her friends, mentors, and her beloved fiancé. She was active in the UNL Cornhusker Marching Band flag line. She is looking forward to continuing her internship at NeDNR over this summer. In the future, she wants to help manage our natural resources in a sustainable way so they can be around for a long time to come. We're so proud Nicole!



Chris Urkoski interned at NeDNR Water Planning Division for one year as an Integrated Water Management Specialist Assistant. He recently graduated from UNL with a B.S. in Civil Engineering. We wish Chris continued success in all his endeavors.

Women in Ag Conference Summary

By Melissa Mosier and Sarah Nevison

At the end of February, Sarah Nevison and Melissa Mosier from NeDNR's Water Planning Division attended the Women in Agriculture (WIA) conference in Kearney, Nebraska. This was the 34th Annual WIA Conference organized by Nebraska Extension and draws women involved in agricultural production from all over the state. At the NeDNR booth, we displayed a map of Nebraska showing where our different integrated water management processes are occurring and we asked the WIA conference attendees to put a poster pin in the location that they were from or where they worked. From that point, we initiated discussions about the status of the integrated management planning processes that we are working on in their part of the state, which often led to more in-depth conversations about statewide and local water policy. Questions about regional hydrology were also brought up, and we were fortunate to be able to refer to our new interactive hydrologic demos, which we displayed on a monitor at our booth. If you haven't taken a look at these yet, you can find them here: <https://dnr.nebraska.gov/water-planning/education>.

Although the two-day conference only allowed a few hours for the attendees to visit the informational booths, we tallied 80 people who engaged with us, or our booth, in some way. Similar to experiences that we've had at this conference in the past, the quality of engagement from the WIA attendees far surpassed attendee engagement that we receive at many other

conferences throughout the year. The WIA conference attendees are always willing to approach our booth and spend some extra time with our staff, allowing us the opportunity to more fully explain what we are displaying and for both parties to ask more questions of each other. Considering the high value of the interactions that take place at the WIA conference, we've consistently found our attendance well worth the relatively small amount of time it takes for preparation and travel.



<https://wia.unl.edu/conference>

At this year's conference, we also learned that almost one-third of agriculturalists in the United States are women. Yet, the proportion of women that the Water Planning Division regularly engages with is not representative of the demographics noted above. The Water Planning Division and our NRD partners have seen successful outcomes in our integrated water management stakeholder processes over the last few years, but there likely remain a few voices that we have yet to hear. Continuing to seek out those voices in forums such as the WIA conference is an important focus for Water Planning's staff in order to ensure that we are fully considering the interests of all of the state's citizens as we go about our work.

NeDNR Staff Answer Call of Duty during widespread flooding

On March 13 the first call came in from the Nebraska Emergency Management Agency (NEMA). "Report to the SEOC (State Emergency Operations Center)."

Driving out to the National Guard base, no one had any idea just exactly what was coming. No one

the Emergency Operations Center (EOC), in the field collecting valuable river level data, and providing valuable information to the public.

We would like to recognize the following team members for all their efforts during this historic event.

Engineering Division:

Shuhai Zheng, Katie Ringland, Jamie Reinke, Stefan Schaepe, Jared Ashton, Chuck Chase, Deanna Ringenberg, Ryan Kelly, Tom Schuerman, and Mark Noble worked shifts and have served as on-call staff at the EOC. Activities at the EOC included:

Staff coordinated with other state agencies and the U. S. Army Corps of Engineers (USACE) in the EOC.

Staff helped contact local emergency managers to verify information as it came into the EOC.

Katie helped write part of the Disaster Declaration on March 18, 2019.

Stefan compiled a list of levees and dams that were impacted. The list of levees included whether or not the levee is in the USACE PL84-99 program and therefore eligible for federal money for levee repair.

Stefan, Jared, Ryan Kelly and Deanna prepared estimated inundation



Tom Klanecky

could have imagined what was to come.

For the next few weeks, and still today, staff at the Department of Natural Resources (NeDNR) went above and beyond their typical work assignments during the recent flooding in our state. NeDNR teams worked tirelessly answering the call to duty providing onsite support at

Call of Duty Continued

- mapping based on river stage for the Platte and Elkhorn Rivers.
- Jamie has coordinated the collection of High Water Marks with NeDNR's Survey group, USACE, and Federal Emergency Management Agency (FEMA).
- Chuck, Jamie, Jared and Katie prepared a "2019 State of Nebraska Disaster Damage Assessment Packet". The packet was emailed and sent via govdelivery to all Floodplain Administrators (FPAs). The packet includes information and sample worksheets that the FPAs can use to complete substantial damage estimates of structures. This is a requirement of the National Flood Insurance Program (NFIP).
- March 20 and 26, 2019 Chuck hosted a webinar to go through the "2019 State of Nebraska Disaster Damage Assessment Packet". These were well attended with 52 and 78 participants, respectively.
- Chuck, NeDNR and FEMA provided Substantial Damage and Flood Insurance workshops at select locations in the impacted area.
- April 2 in St. Paul, Nebraska
- SDE Workshop: 13 attendees, representing 9 communities
- Insurance Workshop: 7 attendees
- April 3 in Norfolk, Nebraska
- SDE Workshop: 31 attendees, representing 24 communities
- Insurance Workshop: 19 attendees
- April 4 in Omaha, Nebraska
- SDE Workshop: 55 attendees, representing 19 communities
- Insurance Workshop: 37 attendees
- Ryan Johnson, Ryan Kelly, Jeehoon Kim, Isaac Remboldt, Jake Bruihler, Christopher Marker, Deanna Stefan Scheape, and Jared Ashton** completed phone

Carol Flaute



survey assessments of all NFIP communities in the affected areas. These calls were to ensure that all floodplain administrators received the Disaster Assessment Packets and understood the permitting requirements. The surveys provided NeDNR a chance to

Katie continues to coordinate with the FEMA Joint Field Office, to ensure that the state stays involved with what FEMA is doing floodplain management wise.

Tim Gokie, who was on vacation at the time, answered phone calls overnight and worked with dam owners addressing dam safety concerns.

Water Administration Division:

Tom Klanecky, Pat Breitreutz, Jeremy Sedlacek, and Stacey Kolar in Ord all worked overtime on streamgaging to keep track of the extensive flooding. After the immediate danger passed, they spent time documenting "high water marks" in the communities affected by the flooding.

Jordan Koerwitz and Stjepan Figuric spent time covering overnight shifts monitoring Willow Creek Dam near Peirce.

Bill Birkel in Norfolk traversed the flooded countryside to streamgage and mark high water elevations at our gages.

Lucas Geyer and Justin Hladik measured flood flows across the basin and documented the flooding with the drone.

Jeff Vifquain and Lucas Hadenfeldt spent time streamgaging and documenting flooding in the



Chuck Chase

communicate directly with our administrators and get a better understanding of the current needs in the State. The phone surveys were performed from March 21 through March 28.

Ryan, Ryan, Jeehoon, Isaac and Jake collected High Water Marks

Chuck and Katie received a significant volume of technical assistance phone calls, and we expect this high call volume trend to continue.

Big and Little Blue River Basins

Jim Williams, Jim Ostdiek, and Jim Marburger worked on coordinating the response and documenting the results.

Spencer Campbell and Lenny Beal spent time repairing the Platte River at Shelton and recorded high water marks along the Central Platte.

Taylor Stephens with our Bridgeport Field Office measured and documented high water marks in the upper Niobrara River Basin.

Ryan Werner, Jeff Hogan and Margeaux Carter collaborated together using Jupyter notebooks to create Flood Inundation boundary maps from the Sentinel 2 imagery for areas where cloud cover was minimal.

BJ Green and Kim Menke took shifts at the SEOC call center. **Christine Southwick and Pam Bonebright** volunteered but were not needed. More than 700 people volunteered to help answer citizens' calls for information and aid.

The survey crew (Jordan, Justin, and Lucas G) are continuing to survey high water marks, with about 15 to go out of locations marked in more than 50 communities.

NeDNR Staff:

Lori Arthur, the public information officer, put in long hours for more than two weeks at the SEOC writing news releases for the joint information center.



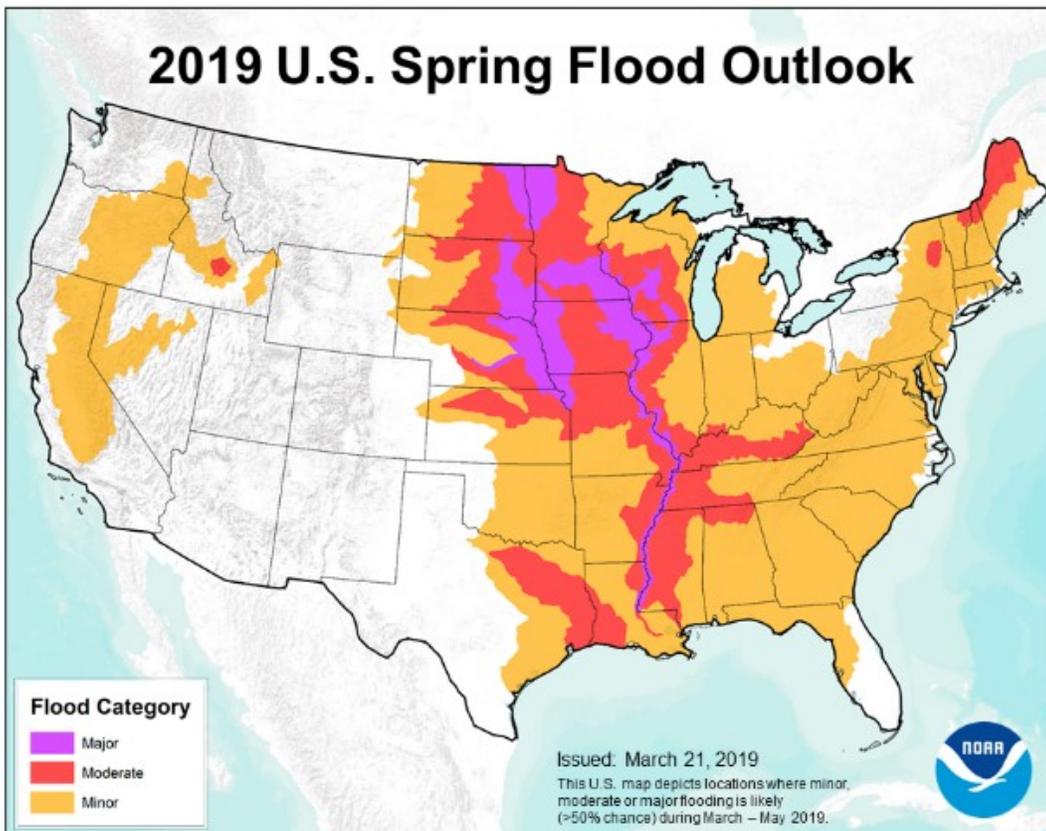
Prepare for a Flood Before the Flood

By Jamie Reinke, PE, CFM and Jared Ashton, PE, CFM

As this year has proven, flooding can happen anywhere and can happen quickly. While some floods develop slowly, allowing forecasters to predict where flooding will occur days or even weeks before the event, flash flood events can occur within minutes and sometimes without any sign of rain. Planning ahead and being prepared for a flood can save your life and give you

peace of mind.

Even though we already saw record flooding across the state in March, the peak flood season in Nebraska typically occurs closer to June. In fact, the National Oceanic and Atmospheric Administration predicts that much of Nebraska is likely (>50% chance) to experience flooding from March through May 2019. Portions of Nebraska, especially along the Missouri River, are still experiencing flood conditions and areas previously impacted may experience more flooding this spring and summer. Now is the best time to take steps to be prepared for a flood event.



Know What to Expect

The most important piece of information to know before a flood is your property's flood risk. Do you live in a mapped community? If so, is your home in a FEMA designated floodplain or floodway? If you are unsure, you can search for your property on NeDNR's [Interactive Floodplain Map](#). If you would like additional information, or have questions

Prepare for a Flood Continued

about your flood risk, reach out to your floodplain administrator. Floodplain administrators for each NFIP participating jurisdiction can be found on NeDNR's website [here](#).

As we get into peak flooding season, it is always important to be aware of weather conditions. Pay close attention to local media, especially if it has been raining hard for several hours, or steadily raining for several days. As the March 2019 event proved, being aware of ice conditions and frozen soils in early spring is also important if there is a threat of heavier rainfall.

Steps to Take Now

Purchase Flood Insurance: Anyone can experience damages from flooding, even if your property is not located in a FEMA designated floodplain, and homeowner's insurance policies rarely cover flood damage. To protect your investment and be more prepared to recover from a flood, work with your insurance agent to purchase flood insurance. After purchasing a flood insurance policy, be sure to keep all insurance policy information and a list of personal property in a safe place that you will be able to access immediately following a flood.

Create an emergency plan for your family: Know the safest routes to get out of your house and neighborhood, if necessary. Identify a safe evacuation location: whether that be staying with an out-of-town relative, in a hotel, or shelter, know what options you have. As part of

your emergency plan, assemble a disaster supply kit. This kit, at a minimum, should include a portable radio, flashlight, packaged food, and bottled water.

While we hope to avoid being impacted by a flood or any other disaster, it is always best to be prepared. The safety of your family is the most important consideration.

DID YOU KNOW...

If you are not in a designated floodplain, you can purchase a flood insurance policy at a preferred rate?

In fact, according to FEMA, property owners outside of mapped high-risk flood areas file more than 20-percent of all NFIP claims and receive one-third of federal Disaster Assistance for flooding.

By taking a few precautions now, you may be better able to recover if you are impacted in the future. For more information about how to prepare before a flood, what to do during a flood, or steps to follow after a flood, please visit NeDNR's website and read "[In the Event of a Flood](#)", "[Are You Ready for a Flood or a Flash Flood](#)", and "[Beyond the Flood](#)".

A Picture Paints 1,000 Words

These photos, mostly taken by NeDNR staff, only begin to tell the story of the March events. What isn't shown here is the amazing Nebraska Strong attitudes, neighbors helping neighbors, strangers helping strangers. Hay being brought in from all over the country. Calls coming day in and day out asking how they can help, what is most needed, or just offering prayers. The landscape will never be the same, but Nebraskans will rebuild. #NebraskaStrong



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