

## Nebraska Surface Water Monitoring Council (NSWMC)

### Spring Meeting

Tuesday, May 14, 2019, 10:00 AM-12:00 PM

NDEQ Van Dorn Facility, 8<sup>th</sup> and Van Dorn St, Lincoln, NE

### Minutes

1. Welcome and introductions
  - a. In the room: USGS (Dave Rus, Nathan Schaepe), NGPC (Thad Huenemann, Tony Barada, Rick Holland, Michelle Koch); NDEQ (Greg Michl, Mike Archer, John Bender, Dave Ihrle, Erik Prenosil); LPNNRD (Tom Mountford and Daryl Andersen), NPPD (Abby Hoessel); NHHS (Elizabeth Esseks); NGO's (George Cunningham); NDA (Craig Romary), OA (Karen Griffin), NARD (Dustin Wilcox);
  - b. Remote: LENRD (Brian Bruckner et al), NDNR (Shuhai Zheng); Middle Niobrara NRD (Sam, Tim and Mike); USGS (Bob Zuellig)
2. Short presentation: Update on proposed revisions to the Waters of the US – John Bender, NDEQ
3. Agency updates
  - a. USGS
    - i. Monitoring: Continuous monitoring at multiple sites in lower Platte and Missouri River plus a few in the Loup; Ongoing sampling at typical sites
    - ii. Recent reports: (see list of citations)
      1. Nebraska: [HAB report on Willow Creek Reservoir](#) released last fall, USGS SIR 2018-5121 found HABs to be related to external nutrient loading much more than internal loading.
      2. Falcone and others provide spatial explanatory data for the last 20 years at the HUC10 level.
      3. Murphy and Sprague deconstruct water quality trends to figure out how much is due to streamflow and how much is due to management activities.
      4. Zuellig and Carlisle discuss how ecological trends are impacted by flow conditions at the time of sampling
    - iii. USGS Water Programs are being restructured, which includes changes to the National Water Quality Program
      1. New priorities to (1) Improve our data delivery; (2) Stand up a NexGen Water Observing System; (3) Develop water prediction models; and (4) Produce integrated water availability assessments
      2. Our existing NAWQA (National Water Quality Assessment) program is being sunset in order to transition to these new priorities
        - a. Existing Assessments will be completed by 2021;
        - b. Ecological monitoring (habitat and biota) will be discontinued in 2020.

- c. Surface and groundwater quality monitoring networks will continue through at least 2021. More changes may occur in 2022, but the fundamental mission to monitor the nation's water quality resources will continue.
  - iv. Beginning the transition to a new database system. There may be a few bumps in the road, but the goal is a transition that is seamless to external users that will eventually become an improvement over the current system.
  - v. Flood sampling – Got some just before the ice break up, and then some on the recession of the flood at Louisville and Waterloo
- b. NGPC
  - i. Transitioning into a Stream and Rivers program to coordinate river assessments with other agencies (2 techs in NP plus Thad in Lincoln);
  - ii. Tony is assuming Dave Tunink's responsibilities with surface water and fisheries management
  - iii. Continue to list species at the state level; More hearings to come; 6 species (1 reptile, 1 bird, and 4 fish);
  - iv. Most rec areas have reopened post-flood, though some sections within those areas are still closed
  - v. Adventure Parks opening up in parks along the Lower Platte
- c. NDEQ
  - i. Rotating basins focus on the Middle Platte and the Loup this year (34 sites)
  - ii. Finish up on NRSA sampling statewide (also 34 sites)
  - iii. 102 monthly ambient site monitoring continues
    - 1. PFAS collection at 14 'integrator' sites
  - iv. E. Coli lab certification – The flood pushed the analytical capacity of certified labs in the state for getting E. Coli results for drinking water. There is NRD (and other) interest in finding out what it takes to become a certified lab. Plans to get more information out:
    - 1. Create a new NebGuide building upon an existing one: <http://extensionpublications.unl.edu/assets/pdf/g1614.pdf>
    - 2. Have a discussion/talk regarding this at the fall joint GW/SW monitoring committee meeting.
    - 3. The State Health lab in Lincoln is the certifying body in the state, and more information is available at <http://dhhs.ne.gov/Pages/Lab-Certification-Requirements.aspx> Further questions can be directed to Laurie Wieting at the lab.
  - v. Sampling support to NGPC lakes as well as private lakes during the flood.
  - vi. Ambient lake monitoring (30 lakes; 24 long term lakes + rotating basin lakes)
  - vii. Beach monitoring started last week
    - 1. Recreational alert level is still at 20 ppb for now, but will be dropping once the lower level is adopted nationally (next season)

- at the earliest); Once adopted, more lakes will end up getting listed.
- viii. Anticipate sampling for microcystins in public water systems under the influence of SW
  - ix. Title 117 update: Triennial report in Governor's office
    - 1. Narrative criteria for microcystin should allow for a seamless adoption of the new level
  - x. Sampling data available via WQX (2010-17, 2018 coming soon). Working backwards as time allows. Can get data off the WQX site, but let Dave I. know if you need help; 250K observations in there from Nebraska; Biological data is headed for the WQX, too, but it's a ways off.
- d. LPNNRD
- i. Involved in continuous monitoring along the Platte at Leshara
  - ii. Floods
    - 1. Platte R levees breached, which led to threats to the LWS;
    - 2. Cost shared on post flood sampling
  - iii. Working w/ NDEQ on 319 grants in Wahoo Cr watershed and Shell Cr watersheds. Shell Creek was the first stream in the nation that was delisted for atrazine. Newman Grove HS group focusing on getting E. Coli off the list as well.
  - iv. Have a Lower Platte River management plan in conjunction with other NRD's
- e. NDA: Pesticide program –
- i. Work with UNL extension to provide training for licenses, including for WQ aspects; Inspectors check/enforce proper pesticide applications
  - ii. There is still funding for the Nebraska Buffer Strip Program ([http://www.nda.nebraska.gov/pesticide/buffer\\_strip.html](http://www.nda.nebraska.gov/pesticide/buffer_strip.html))– any help in promoting this is appreciated
  - iii. The NDA Pesticide Program newsletter is at <http://www.nda.nebraska.gov/plant/newsletter/index.html> if anyone is interested
- f. Ollsson's: Supporting clients that are dealing with flood impacts; Reminder that WSF applications are due (One community along the Missouri River has had intakes that are going high and dry)
- g. NDHHS:
- i. Public drinking water program is not fully staffed;
  - ii. Expect to have lots of 'lessons learned' post-flood. Spent most of March doing flood response because many private wells don't fall under anyone's jurisdiction; Two communities had significant impacts to their drinking water from the flood (Response was varied between them); Working to better support tribal needs during floods; Their office was moved and they weren't directly involved in the official flood incident response.

- h. NGO's: Working with the USACE related to Missouri River infrastructure plans; Trying to follow interbasin transfer status; Interested to hear how reorganization of NDEQ will play out; Nationwide, there continue to be lots of lawsuits related to water-quality or ecological concerns.
  - i. NARD:
    - i. Story that LPNNRD reported could apply to many other NRD's in NE
    - ii. LB177 – PMNRD Flood control bond authority
    - iii. New study on NRD's and nitrogen management coming out – Describes the successes and how other states could benefit from the NRD model
    - iv. New staff member: Megan Grimes – Public Relations
  - j. NDNR:
    - i. Working with FEMA and NEMA on flood response/recovery; Exploring buyouts of properties that are in the floodplains
    - ii. Interbasin diversion: Status report is online
    - iii. Auburn application hearing next week related to induced groundwater recharge for their water supply
  - k. LENRD:
    - i. Many flooding issues: Several communities w/ sig. damage; Prior discussions on flood protection now have a little more interest and the NRD cost-sharing might get stretched
    - ii. Water quality management plan approved by EPA; First focus area will be in the Willow Creek area for mitigation measures; Willow Cr reservoir was within 2 ft of emergency spillway (700 ac into a 1700 ac lake)
    - iii. Working w/ Tiffany Messer on a USDA project on the fate and transport of neonicotinoids using passive samplers in the Elkhorn River.
4. Monitoring council
- a. [Mar 2019 National Water Quality Monitoring Conference](#)
  - b. Mailing lists – Please let [dlrus@usgs.gov](mailto:dlrus@usgs.gov) know if you want to be addressed in the bcc line in email correspondence with the group.
  - c. PFAS
    - i. USGS is part of the national discussion, and is working to develop a reliable collection and analysis protocol. Will include lots of blanks because of the ubiquitous nature of PFAS. Hope to have that ready by Fall 2019.
  - d. Open discussion: Any lessons learned from water-quality monitoring of the March 2019 Floods?
    - i. The majority of this flood wasn't able to be sampled using traditional techniques because of the hazards that the ice introduced
    - ii. Post-flood, is there a recommendation for what to sample for in private lakes? Bacteria? Without a baseline, it's complicated
    - iii. Do we need to coordinate better during the flood?
  - e. Other business?
5. Short presentations:

- a. Effects of antecedent flow on ecological sampling and the ability to see ecological trends – Robert Zuellig, USGS

Notes by Dave Rus

**Some upcoming meetings of possible interest:**

June 24-28, 2019; Federal Interagency Sedimentation and Hydrologic Conference, <https://www.sedhyd.org/2019/>  
Sept 15-20, 2019; Nebraska Water Center 2019 Water & Natural Resources Tour of the Yellowstone/Missouri headwaters

**Some recent publications of possible interest:**

Laura M. Bexfield, Patricia L. Toccalino, Kenneth Belitz, William T. Foreman, and Edward T. Furlong, 2019, Hormones and Pharmaceuticals in Groundwater Used As a Source of Drinking Water Across the United States: Environmental Science & Technology Article ASAP, DOI: <https://doi.org/10.1021/acs.est.8b05592>

Civiello, A. P., Gosch, N. J., Gemeinhardt, T. R., Miller, M. L., Bonneau, J. L., Chojnacki, K. A., DeLonay, A. J. and Long, J. M. (2018), Diet and Condition of Age-0 Scaphirhynchus Sturgeon: Implications for Shallow-Water Habitat Restoration. North Am J Fish Manage. <https://doi.org/10.1002/nafm.10236>

Matteo D'Alessio, Bruce Dvorak, and Chittaranjan Ray, 2018, Riverbank Filtration Impacts on Post Disinfection Water Quality in Small Systems—A Case Study from Auburn and Nebraska City, Nebraska: Water, vol. 10(12), 1865, <https://doi.org/10.3390/w10121865>

Dere Ashlee L, and others, 2019, Solute Fluxes Through Restored Prairie and Intensively Managed Critical Zones in Nebraska and Iowa: Frontiers in Earth Science, v. 7, p. 24, <https://doi.org/10.3389/feart.2019.00024>

James A. Falcone, Jennifer C. Murphy & Lori A. Sprague (2019) Regional patterns of anthropogenic influences on streams and rivers in the conterminous United States, from the early 1970s to 2012, Journal of Land Use Science, <https://doi.org/10.1080/1747423X.2019.1590473> plus a corresponding data release at <https://doi.org/10.5066/F7XW4J1J>

Jennifer Murphy, Lori Sprague, 2019, Water-quality trends in US rivers: Exploring effects from streamflow trends and changes in watershed management: Science of The Total Environment, Volume 656, Pages 645-658, <https://doi.org/10.1016/j.scitotenv.2018.11.255>.

New-Aaron, Moses; Meza, Jane L.; Shea, Patrick J.; and Rhoades, Martha, "Birth outcomes and water: A multidisciplinary study" (2018). Posters and Presentations: College of Public Health. 11. [https://digitalcommons.unmc.edu/coph\\_pres/11](https://digitalcommons.unmc.edu/coph_pres/11)

Pedati C, Koirala S, Safranek T, Buss BF, Carlson AV. Campylobacteriosis Outbreak Associated with Contaminated Municipal Water Supply — Nebraska, 2017. MMWR Morb Mortal Wkly Rep 2019;68:169–173. DOI: <http://dx.doi.org/10.15585/mmwr.mm6807a1>

Rus, D.L., Hall, B.M., and Thomas, S.A., 2018, Relating cyanobacteria and physicochemical water-quality properties in Willow Creek Lake, Nebraska, 2012–14: U.S. Geological Survey Scientific Investigations Report 2018–5121, 43 p, <https://doi.org/10.3133/sir20185121> .

Schmidt, T.S., Van Metre, P.C., and Carlisle, D.M., 2018, Linking the agricultural landscape of the Midwest to stream health with structural equation modeling: Environmental Science and Technology, <http://dx.doi.org/10.1021/acs.est.8b04381>.

R.F. Spalding, A.J. Hirsh, M.E. Exner, N.A. Little, K.L. Kloppenborg, 2019, Applicability of the dual isotopes  $\delta^{15}\text{N}$  and  $\delta^{18}\text{O}$  to identify nitrate in groundwater beneath irrigated cropland: Journal of Contaminant Hydrology, v. 220, p. 128-135, <https://doi.org/10.1016/j.jconhyd.2018.12.004>

Mark R. Sweeney, Ben Fischer, Karen Wermers, Tim Cowman, 2019, Eolian and fluvial modification of Missouri River sandbars deposited by the 2011 flood, USA: Geomorphology, Volume 327, p. 111-125, <https://doi.org/10.1016/j.geomorph.2018.10.018>.

Uerling CC, Hamel MJ, Pegg MA. Fish community response to habitat variables in two restored side channels of the lower Platte River, Nebraska. River Res Applic. 2018;1–10. <https://doi.org/10.1002/rra.3390>

Neil Wildgust, Kerryanne M. Leroux, Barry W. Botnen, Daniel J. Daly, Melanie D. Jensen, Nicholas S. Kalenze, Matthew E. Burton-Kelly, Chantsalmaa Dalkhaa, Thomas E. Doll, Charles D. Gorecki, 2019, Pre-feasibility study of CCS in western Nebraska: International Journal of Greenhouse Gas Control, vol. 84, p. 1-12, <https://doi.org/10.1016/j.ijggc.2019.03.002>

Zuellig, R.E., and D.M. Carlisle. 2018. "Effects of Antecedent Streamflow and Sample Timing on Trend Assessments of Fish, Invertebrate, and Diatom Communities." Journal of the American Water Resources Association 1–14. <https://doi.org/10.1111/1752-1688.12706>