

# Nebraska Surface Water Monitoring Council (NSWMC)

## Meeting Minutes Spring Meeting, 2024

Thursday March 28<sup>th</sup>, 2024, 9:30 AM – 11:30 PM  
Hybrid Meeting

### 1. Welcome and Introductions

#### a. In Attendance In Person:

Tara Anderson, Dave Rus, Brenda Densmore, Nathan Schaepe, Dave Schumacher, Katie Hickle, Jessica Russell, Chris Schroeder, M Gude, Ian Ghanavati, Tony Barada, Dave Bubb, Eric Prenosil, Mike Archer, Drew Ratkovec, Jennifer Swanson, Greg Michl, Tom Heatherly

#### b. In Attendance Online:

Thomas Mountford, Mark Lindemann, Brian Bruckner, Leeann Smith, Richard Holland, Crystal Powers, Mark Pegg, Craig Romary, Noah Hovorka, Dillon Vogt, David Potter, Amanda Osborn, Brett Roberg, Jeremy Gehle, Dick Erhman, Brian Barnes, Alexa Davis, Tylr Naprstek, Laura Nagengast, Mike Sousek, Josh Schnitzler, Mike Murphy, Adam Rupe

### 2. Agency Updates Round Table

#### **USACE**

##### **Salt and Papillion Creek Reservoir Monitoring:**

- Continued monitoring at Branched Oak, Wagon Train, Ed Zorinsky, and Glenn Cunningham in coordination with the NDEE.
- Reduced monitoring at all other reservoirs (more comprehensive every third year).
- Zebra mussel eDNA sampling conducted in June at all reservoirs.
- Hypolimnetic withdrawals continuing at Cunningham. Also, at Conestoga and Standing Bear if pool levels go up. Intent is to remove legacy nutrients from reservoirs. Additional sampling done to verify effectiveness. Past results look promising.

##### **Beach Watch Monitoring:**

- Continued beach watch monitoring at Lewis and Clark, Lake Yankton, and Glenn Cunningham in coordination with the NDEE

##### **Missouri River Monitoring:**

- Continued monitoring along the Missouri River downstream of Fort Randall Dam to Rulo, NE in coordination with the NDEE.

## **NDEE**

### **Ambient Steam Monitoring Program**

- Network of 101 fixed stations. 6 Missouri River locations collected by USACE.
- Main stem and tributary streams.
- Thirty-four parameters analyzed at each sampling location.
- Samples are collected monthly, year-round.
- Long-term changes to water quality can be assessed.

### **Public Beach Monitoring Program**

- 55 public beaches at 50 lakes across Nebraska will be sampled weekly May through September for microcystin and *E. coli* in 2024.
- Wagon Train Lake and Summit Lake will be dropped from the list of lakes sampled in 2024 due to low water levels after undergoing renovation.
- Ogallala Beach at Lake McConaughy and Nunda Shoal Beach at Calamus Reservoir were added to the list of beaches sampled in 2023.

### **Basin Rotation Monitoring Program**

- Geographically focuses water quality sampling in one to three major river basins per year.
- Weekly monitoring of rivers and streams from May-September.
- Fourteen parameters analyzed at each sampling location.
- In 2024, NDEE will sample 45 sites within the Republican, Little Blue, and Big Blue River basins.

### **Stream Biological Monitoring Program**

- Diversity and numbers of resident aquatic macroinvertebrate and fish communities are evaluated to assess the overall health of streams.
- Sites chosen with a probabilistic sampling design within the framework of the basin rotation schedule.
- Approximately 30 sites are planned to be sampled in 2024 within the Republican, Little Blue, and Big Blue River basins.

### **Fish Tissue Monitoring Program**

- Assess fish tissue for toxins, such as mercury and polychlorinated biphenyl compounds (PCBs).
- Current fish tissue consumption advisories at 137 locations (130 lakes and 7 river/stream segments).
- In 2024, sampling will be conducted within the Republican, Little Blue, and Big Blue River Basins.

### **Ambient Lake Monitoring Program**

- Consists of a core of 31 long term trend lakes that are monitored by NDEE (24), United States Army Corps of Engineers (4), and two NRD's (3) to characterize and assess a variety of different lakes and reservoirs within the state.
- Additionally, each year 3-4 basin lakes are targeted for sampling for 2 consecutive years within a set of river basins that follows NDEE's six-year basin rotation scheme with at least one lake sampled within each river basin.
- Lake Ogallala and Bridgeport Middle Lake are basin lakes that enter the last year of monitoring in 2024.

- Swanson Reservoir, Hugh Butler (Red Willow) Reservoir, Lone Star Reservoir, Oxbow Trails Reservoir, and Big Indian Lake (11A) were added as basin lakes for 2024.

### **Fish Kill and Citizen Complaint Investigations**

- Dead fish and other surface water concerns are relayed to NDEE throughout the year.
- On-site investigations and water quality sampling performed at sites of many of the complaints.
- Seven fish kills investigated from July 1, 2022, to June 30, 2023: Five were from low dissolved oxygen levels and two resulted from unknown causes.
- Ninety-one complaints of surface water pollution were taken by the Monitoring Section in the last year, many were forwarded to other NDEE programs.

### **NRD Watershed Special Studies**

- NDEE has partnered with several NRDs on Watershed Special Studies with strategic plans to monitor the sources and quantities of pollutants entering these systems from specific sub-watersheds.
- Information gathered allows a complete assessment of stream segments where data is insufficient to determine if all designated uses are met.
- Allows finer calibration of predictive models to allocate pollutant loads to specific sub-watersheds and to quantify load reductions from sub-watershed conservation projects.
- Sampling partners of Watershed Special Studies in 2024 include the Lower Big Blue NRD – Turkey Creek Special Study.

### **Regional Monitoring Network**

- Collaboration between the USEPA and numerous states, tribes, and other organizations to collect continuous stream discharges and temperatures and other chemical and biological data.
- Data are used as baselines for long term comparisons of stream condition.
- Having many sensors deployed nationwide that collect continuous data allows USEPA and other partners to detect significant yet subtle trends in stream condition.
- NDEE has been monitoring 7 streams since May 2017.
- Each location has a sensor that collects water level and temperature every thirty minutes, typically bolted to a post driven into the stream bottom.
- Each of the study locations is also sampled as part of the NDEE Ambient Stream Monitoring Program.

### **National Rivers and Streams Assessment**

- NDEE partnered with USEPA to assess Nebraska stream quality as part of their larger national assessment.
- Collected data includes benthic macroinvertebrate, algal, and fish communities, water chemistry, fish tissue, and others.
- NDEE sampled 27 streams for NRSA in 2023 and will sample another 17 in 2024.

## **USGS**

1. Water quality – SW - data collection:
  - 1.1. Ongoing sampling at National WQ Network sites (Maple Cr, Elkhorn R, Platte R, and Dismal R) and Salt Cr at Waverly

- 1.2. Continuous WQ monitoring sites:
  - 1.2.1. Several sites in Lower Platte R corridor, Niobrara River near Sparks, Bow Creek at Wynot, Bazile Creek nitrate; pH and WT monitor on N Platte River @ Scottsbluff.
  - 1.2.2. Sites in [USGS Dashboard](#)
  - 1.2.3. Also have real-time water temperature on Platte at Venice and Overton, Dismal nr Thedford, and Niobrara at Verdel
- 1.3. PFAS sites: Dismal River nr Thedford
- 1.4. Potentially collecting storm samples in Sarpy County
2. Surface water quality reports in progress
  - 2.1. Nutrients and microbial source tracking – Platte at Ashland – Dave Rus POC
  - 2.2. Arsenic characterization in the Lower Platte River and alluvial aquifer – Matt Moser POC
  - 2.3. Sediment characteristics downstream of the dam failure at Spencer – Nathan Schaepe POC
3. Upcoming changes when accessing USGS sample data
  - 3.1. [Accessing discrete water quality and sample data on WDFN | Water Data For The Nation Blog \(usgs.gov\)](#)
  - 3.2. Data are still available in our old system, but are not being updated. Eventually the old system will be turned off

Some recent water-quality reports of potential interest – not all USGS

*Tesoriero, A.J., Erickson, M.L., Conaway, C.H., Tomaszewski, E.J., and Green, C.T., eds., 2024, Knowledge gaps and opportunities for understanding water-quality processes affecting water availability for beneficial uses: U.S. Geological Survey Open-File Report 2023–1086, 81 p., <https://doi.org/10.3133/ofr20231086>*

*Atkinson, J. (2023). Evaluation and Interpretation of Legacy Major-Ion Chemistry for the Niobrara River Watershed, Northwestern and Northcentral Nebraska, USA. *Adv Envi Wast Man Rec*, 6(3), 472-489*

*Evaluating Youth-Led Citizen Science for Improved Monitoring of Domestic Well Water Quality in Nebraska, Christopher A. Olson, Arindam Malakar, Matteo D’Alessio, Nicole Schumacher, Chittaranjan Ray, and Daniel D. Snow, *ACS EST Water* 2024, 4, 2, 601–609, <https://doi.org/10.1021/acsestwater.3c00640>*

## **NGPC**

- -Lake and reservoir monitoring for fish and habitat (trends to better manage populations); Fish kill investigation collaboration
- -Aquatic Habitat plan - 3<sup>rd</sup> iteration – identify areas of need to focus on; Working to implement beneficial projects – Will reach out to stakeholders
- Harlan County Res – Collab w/ USACE to improve habitat in Methodist Cove
- Soldier Cr stream restoration project – Carter P Johnson dam decommissioning coming, so improving stream habitat in anticipation.
- Water section has grown – Brett Roberg hired as watershed ecology program manager in Kearney;
- NDEE 319 met recently (and to meet again) to collaborate

## **NRCS**

- Watershed protection program; 20+ sponsors/stakeholders that they meet with when they start projects; Multi-use projects, including ecology and water quality management
- Recent meeting up in Blair with Omaha Tribal reps for starting up a watershed management plan for the Tribe

## NARD

- Basin tour in Republican River in June
- Just back from Washington DC meetings; Presentations from EPA – See that 95% of nitrate violations are from GW, but SW violations impact more people; Nebraska ranks #4 in 319 projects focused on GW; More national focus on PFAS

### 3. Conservation Partnership for Fish and Wildlife – Tony Barada ([tony.barada@nebraska.gov](mailto:tony.barada@nebraska.gov)) NGPC

- To explore ways to broaden our impact on Fish and Wildlife management.
- Short term, mid-term, and long-term needs.
- Training needs and who could provide that training.
- Document coming – Will be shared.
- 8 themes
  - External training
  - Understanding our systems
  - Conservation and Community connections
  - Adaptive management
  - Data Integration
  - Innovative solutions
  - Innovative water strategies
  - Create a centralized SW database.
- Is there a way that these could be mapped.
- Getting a list of everything that each agency is doing could be a starting point.
- Coming up with a way of making data in a standardized format?
- Is this for figuring out what everyone is doing this year? Or everything that everyone has collected?
- Would be good to consult w/ the Clearinghouse folks to figure out how they compile data from multiple sources.
- NDNR has offered their platform for hosting continuous data (GW levels, other)
- Develop baseline and long-term data.
- What is the follow-up?
- The group had a lengthy discussion about the best format for a centralized database of surface water monitoring efforts in the state. Could this be an interactive map? Dave Schumacher was tasked with collecting data from agencies to begin this process. Dave Rus offered to help with this task.
  - Jeremy Gehle suggested looking into Aquatic Informatics <https://aquaticinformatics.com/>

### 4. Nebraska Wildlife Action Plan Update – Tony Barada NGPC

- Blueprint for conserving F&F through voluntary actions of communities and individuals.
- Projects to improve habitats listed in the plan will then be eligible for funding.
- Plan update in progress – Goal to complete by Oct 2025.
- Public meetings held across the state.
- Finding that aquatic habitats weren't adequately addressed in previous plan.
- Use biologically unique landscape (BIL) approach for management.

- Aquatic systems got shoehorned into the BIL, and update will treat them as more of their own unique system.
- Brett Anderson (NGPC) the project lead on this.

5. Presentations

- a. Tom Heatherly - NDEE ([tom.heatherly@nebraska.gov](mailto:tom.heatherly@nebraska.gov)) – Nitrate in Nebraska Streams

6. Monitoring council(s) business

a. Meetings of interest

- i. Nebraska Water Center <https://watercenter.unl.edu/conferences-and-events>
  1. Spring Water Seminar Series
  2. Fall Water Conference – October
- ii. American Fisheries Society – Honolulu, HI September
- iii. North American Lake Management Society – Lake Tahoe – November 2024  
<https://www.nalms.org/nalms2024/>
- iv. Midwest Fish and Wildlife Conference – St. Louis Missouri – January 2025  
<https://www.midwestfw.org/>

b. Updating the NSWMC Charter

- i. Change NDEE agency name.
- ii. Members Listed
  1. Any additional members?
  2. Changes to listed members?
- iii. Meetings
  1. Currently states that the council will meet no less than 4x per year and hold conferences. Discussion?

7. Action items?

- a. Statewide interactive map – surface water sampling efforts: location, parameters, frequency, primary contact.