A Monthly Publication of the Nebraska Environmental Trust

June 2019

Executive Director Corner

Nebraska’s weather continues to keep us guessing. Most of the State is above average in precipitation at this point and many farmers were unable to get into the fields in a timely manner for planting. The Missouri River continues to be high and flooding vast parts of Nebraska, Iowa, Kansas and Missouri. I flew into Eppley Airfield in Omaha this weekend and I couldn’t believe how high the water was and how many fields and roads were under water. A few highways in the Sandhills currently have water flowing over them. It is very difficult to detour in the Sandhills, as there just aren’t a lot of roads. We continue to monitor Trust projects that have sustained flood damages.

This week I’ll be attending the annual Nebraska Grazing Lands Coalition summer grazing tour in the North Platte area. This year the Nebraska Youth Range Camp will be joining part of the tour. This is the 56th Range Camp and it is all week long at the Ag Campus in Curtis. I will also participate in a ranch tour of the 2019 Nebraska Leopold Conservation Award winner. The tour of the Sundstrom family ranch north of Moorefield will occur June 13th.

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The Unicameral finished a few days early and now it is time for interim studies and preparations for next year. The Trust’s budget for the next biennium was approved.

The Husker men’s baseball team didn’t get very far in tournament play, but maybe there is a team you can root for in the College World Series. You have Louisville, Michigan, Arkansas, Auburn, Vanderbilt, Florida State, Mississippi State and Texas Tech. to pick from. The Husker’s will be getting a new baseball coach soon, as Darin Erstad has resigned to spend more time with his family. Husker men’s basketball fans are still on cloud nine with the hire of Fred Hoiberg. The Scott Frost excitement is building for this fall and it should be an interesting season. The University of Colorado has already warned its season ticket holders not to be selling the Husker tickets because they want to prevent a “Sea of Red” on their home field.

Have a safe summer.

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With support from the Nebraska Environmental Trust (NET), Keep Omaha Beautiful (KOB) launched the Trees for Omaha program on Arbor Day 2018. The program focuses on planting underrepresented, native trees in parks and public spaces that have lost or will lose ash trees due to the invasive Emerald Ash Borer (EAB). The goal is to diversify and strengthen Omaha’s tree canopy so
that it is more resilient to future pests and can continue providing beneficial ecosystem services to the community and habitat for urban wildlife. In addition, KOB strives to make the program model and resources available to other Nebraska communities that will need to address EAB.

As part of the program, KOB works closely with the City of Omaha’s Parks & Recreation Department and the Nebraska Forest Service (NFS). In conjunction with these partners, KOB developed program specifications and protocols that require best practices for sourcing, growing, planting, and maintaining the trees.

While the majority of the trees are planted by contractors, KOB also conducts volunteer-based planting events each spring and fall that incorporate service-learning elements. In celebration of Arbor Day 2019, KOB worked with 90+ volunteers to plant 183 trees along a new section of the West Papio Trail with the objective of establishing an official trail arboretum. Through the spring of 2019, KOB has now planted more 1,350 trees in 26 public parks/spaces. And over the next two to three years, KOB hopes to plant another 2,000 to 3,000 more trees.

KOB is immensely grateful to the NET, a large private donor, and other program supporters for investing in this program, including: the Arbor Day Foundation, FedEx, Giger Foundation, Hy-Vee, International Paper, Papio-Missouri River Natural Resources District, Metropolitan Utilities District, Peter Kiewit Foundation, Suburban Rotary, Tyson, and various community donors and volunteers.
Understanding How Antibiotic-Resistant Gene Pools Influence the Microbial Ecology of the Platte River and Its Tributaries- submitted by Samodha Fernando, Associate Professor, UNL

Nebraska is a state rich in biodiversity with more than 100 species of fish, 30,000 species of insects, 80 species of mammals, 14 species of amphibians, 49 species of reptiles and nearly 1,500 species of plants. However, 27 of Nebraska's native species have been listed as endangered or threatened, with 10 of these species being federally endangered.

This list includes 7 species of fish, including the federally threatened pallid sturgeon (*Scaphirhynchus albus*) and topeka shiner (*Notropis topeka*). This decline in fish numbers and reproductive success may be due in part to antimicrobial compounds running off into the Platte River Basin from cattle operations and human-related activity.

Antimicrobials within the water column may alter microbial communities and select for antibiotic-resistant microbial populations, which in turn may negatively affect the primary productivity and nutrient cycling of the aquatic ecosystem.
Fish exposed to antimicrobials and antibiotic-resistant microorganisms may also experience detrimental changes to their gut microbiota, thereby depressing immune function and reducing reproductive success. In order to preserve the integrity of the microbial communities that live in Nebraska's water and fish, it is necessary to study how antimicrobials are affecting the Platte and its tributaries.

This project seeks to document antibiotic-resistant genes in the water and fish microbiomes of the Platte Basin to determine the extent of antimicrobial pollution and how it may be correlated to other variables such as time of year, proximity to pollution source, and river nutrient loading.

The project was funded by NET in 2018 to improve water quality and fish health.

Taking samples to be tested.

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**Upcoming Events**

- August 5 - 6, 2019 - 3rd Quarter Board Meeting, Beatrice, NE.
- August 23 - Sep. 2, 2019 - Nebraska State Fair, Grand Island, NE.
- September 3, 2019 - Grants Deadline
- September 7, 2019 - World O Water Fest, Omaha, NE.
- November 7, 2019 - 4th Quarter Board Meeting, 1:30 pm.