June 2014 marks the 300th Anniversary of the Discovery of the Platte River. On June 16, 1714 French explorerer Étienne Veniard Sieur de Bourgmont and his small crew reached the confluence of the Platte and Missiouri rivers where current day the city of Plattsmouth now resides. Bourgmont named the river after the Oto word meaning “flat water”.
The City of Plattsmouth will be celebrating the 300th Anniversary of the Discovery of the Platte River on June 21st and 22nd with festivities free to the public. Join us in attending or look to our website soon for pictures and account of our experience!
For more information on the event please contact:
PlattsmouthHistorian@Gmail.com or call (402) 296-5544

Upcoming LPRCA Events in 2014

August 28- Water Quality Open , Quarry Oaks Golf Course
November 6- 2014 Lower Platte River Summit , Camp Carol Joy Holling

Check www.lowerplatte.org for updates about upcoming events and meetings

For Further Information contact:
Meghan Sittler, Coordinator
Lower Platte River Corridor Alliance
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3125 Portia Street
Lincoln , NE 68501-3581
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www.lowerplatte.org

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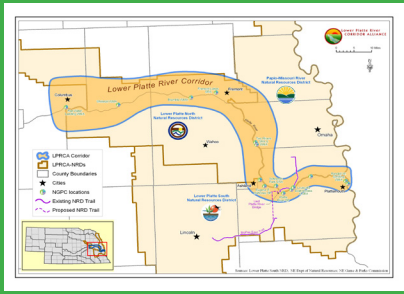
PLATTE RIVER Update

Spring/Summer 2014

Biannual Newsletter of the Lower Platte River Corridor Alliance



LPRCA MEMBERS

Lower Platte North NRD
Lower Platte South NRD
Papio-Missouri River NRD
NE Dept of Natural Resources
NE Dept of Environmental Quality
NE Health & Human Services
NE Game & Parks Commission
NE Military Dept
University of Nebraska -
Conservation &
Survey Division,
UNL School of Natural Resources
Water Center

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Layout, Design, and Editing by:
Joshua Price & Meghan Sittler

Lightning strikes twice over the lower Platte River between Lincoln and Omaha.

From the Coordinator:

Spring and summer are very busy times on the lower Platte River and for the LPRCA. People flock to the lower Platte and the many Nebrasaka Game and Parks Comission, NRD and community recreation areas for fishing, bird watching, camping, boating, paddling, biking, hiking and generally enjoying the unique resources of the lower Platte River. Many of the cabins along the river spring to life as do the various mining operations and the extremely productive farmland changes from fields of brown to green as corn, soybeans, vegetables, grapes and other crops thrive in the soils and the spring rains. It is also a dynamic time on the river as we experience high spring and early summer flows fed by run off and rain and then transition into lower flows—which we hope stay far above the drought 2012!

We hope that in this issue of the Platte River Update you can see the work of the LPRCA and its partners as we continue to meet the challenges of the dynamic natural and human environments of the lower Platte. Please check out our new LPRCA website for more information on our events, projects and the Platte River. Thanks again for your interest in the LPRCA!

News Around the LPRCA

Platte Basin Timelapse: Where We Go From Here

By Steven Speicher, Platte Basin Timelapse

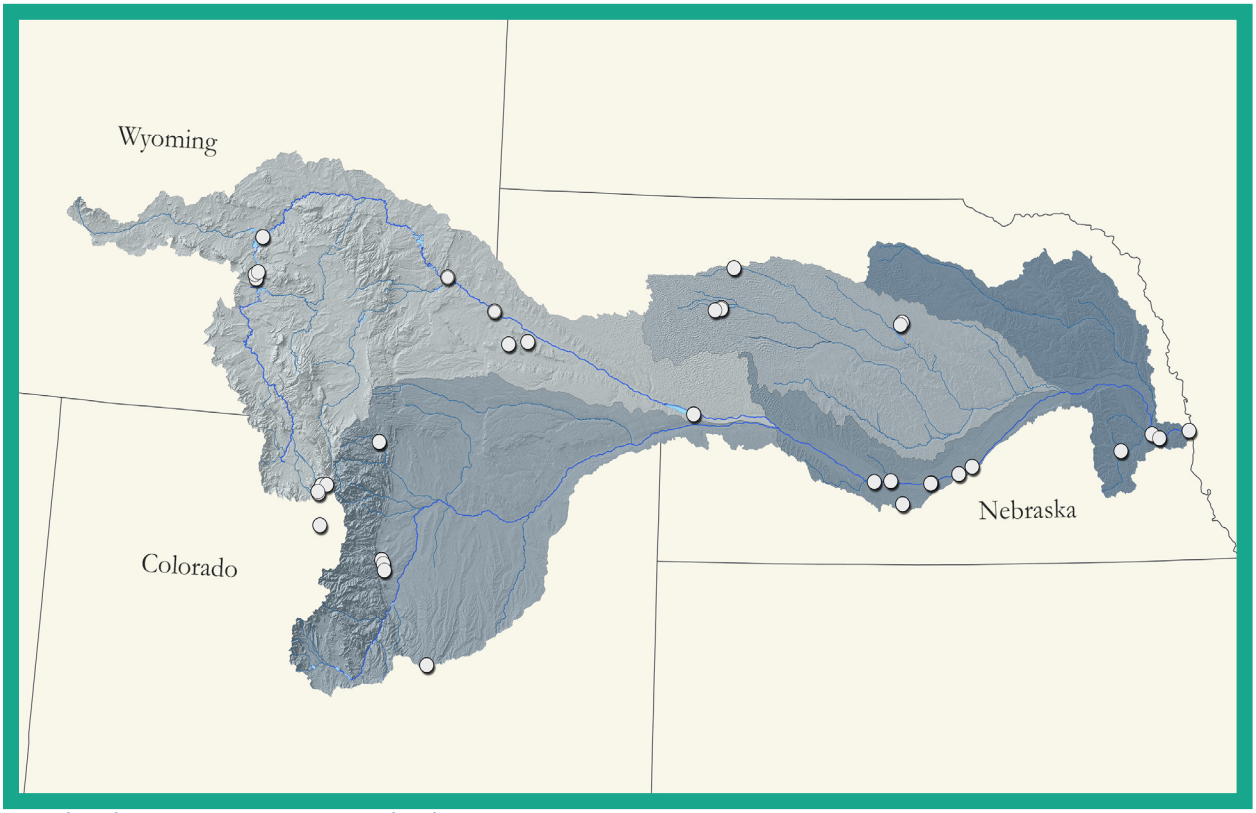
They say a picture is worth a thousand words. What if you take hundreds of thousands of pictures and compress them, watching seasons or years unfold in less than a minute?

During the last three years, the Platte Basin Timelapse team has deployed more than 40 timelapse cameras throughout the entire Platte River watershed (see map). Each camera takes a photograph every daylight hour of every day. Covering parts of Nebraska, Wyoming, and Colorado, the 90,000 square miles make for a diverse and spectacular stage to capture processes on the landscape, delivering a three part outcome: collecting a visual database, building curriculum for educators, and telling compelling stories in digital forms, from online articles to a documentary film.

Up to this point, we have primarily been a tech company, putting cameras on the landscape and producing myriad of timelapse videos, which let us see an entire watershed in motion. We've gone through several iterations of camera technology, watched the basin fill to the brim one year, and then run empty the next year. To date, we have almost one million images. So what?

In some ways, the "so what?" remains to be seen. We consider the last three years of collected images as a visual dataset—a dataset we hope will attract the scientific community. Images offer an increasingly efficient and effective method for scientists to communicate their research to the public.

With that in mind, we've partnered with the University of Nebraska-Lincoln's Jeffery S. Raikes School for Computer Science and Management, under a grant from The Daugherty Water for Food Institute, to develop Phocalstream. This open-sourced software is a web-based image explorer that brings the Platte Basin to life in a whole new way. Once fully developed, users will be able to search, sort, and catalogue our complete image



Starting in 2011, the Platte Basin Timelapse team has deployed over 40 cameras throughout the Platte River watershed. Each camera takes one photograph every hour of every day, visually documenting changes on the landscape.

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News Around the LPRCA

Nutrient Reduction Efforts at Fremont State Lakes

By Jennifer Swanson, NARD/NDEQ

Fremont State Recreation Area (SRA) was created in the 1940's and is a popular recreation area with over 800,000 annual visitors including campers, picnickers and water enthusiasts. The SRA has approximately 40 acres of land and 20 sandpit lakes which contain approximately 265 surface acres of water.

The Nebraska Department of Environmental Quality (NDEQ) is required by the federal Clean Water Act to prepare a biennial list of impaired surface waters. Many of these waters are experiencing water quality problems related to elevated nutrients and no longer support their assigned beneficial uses as listed in Title 117-Nebraska Surface Water Standards. This list is referred to as the 303(d) List of Impaired Waters. In 2010, the 303(d) list included 8 Fremont State Lakes with 17 different impairments. In 2012, the 303(d) list included an additional 13 impairments for a total of 30 different impairments. The impairments at Fremont SRA include nutrients (total phosphorus and total nitrogen), pH and dissolved oxygen. These impairments can have an adverse effect on the aquatic life found in Fremont SRA lakes and can also lead to increased toxic algal blooms which will have a direct effect on the lakes' recreational beneficial uses.

In order to address the impairments at Fremont SRA the NDEQ applied for a Nebraska Environmental Trust Grant (NET) and Nebraska Game and Parks Commission (NGPC) applied for a 319 Grant to treat twelve lakes with aluminum sulfate. Four of the twelve lakes also received a fish renovation. Funding was awarded in 2012 and the alum treatment and fish renovation (rotenone treatment) occurred in the fall of 2012. Alum was added to the water to form a floc which binds to phosphorus. The alum stripped the water column of any phosphorus and continues to bind and retain phosphorus as it is released from the bottom of the lake until all binding sites of the floc are full. Previous alum treatments at Fremont SRA have proven to be successful in reducing phosphorus concentrations and as a consequence reducing algal growth.

Pictured above and below specially equipped water craft administer the alum treatment

The University of Nebraska-Lincoln (UNL) collected pre- and post-renovation water quality data in conjunction with the alum treatment and fish renovation to monitor water quality changes within the lakes. Along with the data collection, UNL is studying the potential long-term response of alum treatments and the response of the biotic community to restoration. UNL compared data from 3 control lakes (lakes that received no treatment), 8 lakes treated with alum only, and 4 lakes treated with alum and rotenone. Preliminary results indicate the alum and rotenone treatment have the greatest effect on improving water quality by reducing nutrients, chlorophyll a, cyanobacteria and microcystin toxins.

This project has left us in a unique position to expand our understanding of the longevity and cost benefits of multiple management techniques. As a result UNL, NDEQ and NGPC have agreed to split the costs to support another year of sampling (summer 2014). The goal is to determine whether or not the nutrient sequestering processes of alum treatment and fish renovations provide long term protection from poor water quality and poor fish community structure.

Thank you to Amy Burgin and Chirsta Webber from UNL for providing preliminary results and pictures of the alum treatment.

News Around the LPRCA

Western Sarpy Clear Creek Flood Reduction Project

By Marlin Pertermann and Emmet Egr, Papio-Missouri River NRD

Frequent Platte and Elkhorn River flooding in western Sarpy County and the Clear Creek area of eastern Saunders County threatens critical water supply well fields for Omaha's Metropolitan Utilities District and the City of Lincoln Water System, facilities at Nebraska National Guard's Camp Ashland along with communications and transportation corridors, including Interstate 80 and NE Highway 6.

Extensive ice jam flooding occurred in this area in 1993, 18,000 acres of cropland was flooded, Interstate 80 was closed for nearly 2 days, Highway 6 was closed for months, Burlington Northern Santa Fe Railroad was heavily damaged, Camp Ashland was closed for a time and the City of Lincoln Water System suffered severe damage losing one of two major supply lines for the community. Flood damages were estimated at $14 million.

After this flood event, the river reach upstream of Highway 6 in Sarpy and Saunders County was identified for a levee rehabilitation project by the Corps of Engineers. The project was authorized by Congress in the Water Resources Development Act of 2000. The Papio-Missouri River NRD and two adjoining NRDs on the west side of the Platte River (the Lower Platte North and Lower Platte South NRDs) are the local sponsors for the $42 million project. The sponsors with financial assistance from the Nebraska Department of Natural Resources are funding about 35% of the project cost and the Corps is funding 65% of the cost. The National Guard also funded a portion of the levee segment on their property.

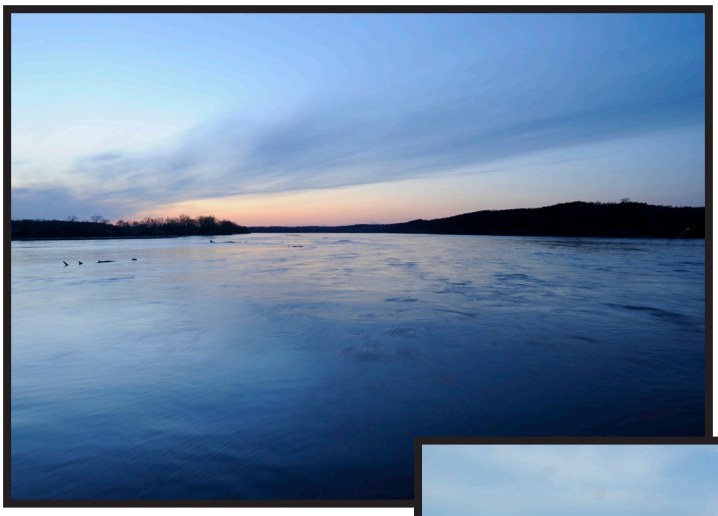
The Historic Building 50 at Camp Ashland

Confluence of Platte and Elkhorn Rivers

The project is about 75% completed with some levee construction and wildlife mitigation work remaining to be done on the Saunders County side of the Platte River. About 20 miles of levees will be improved along this stretch of the Platte River, one of the most ice jam flood-prone areas of the state. The elevation or removal of impacted cabins plus environmental and wildlife enhancements are also a part of this project.

Perhaps the most significant benefit of the Western Sarpy/Clear Creek Flood Reduction Project is the security of Omaha and Lincoln well fields, supplying water to nearly 50% of Nebraska's population. Three NRDs, the Papio-Missouri River, Lower Platte South and Lower Platte North, have been working diligently with the US Army Corps of Engineers, the State of Nebraska, other government agencies and the Congressional delegation for over 13 years to see this project through to completion.

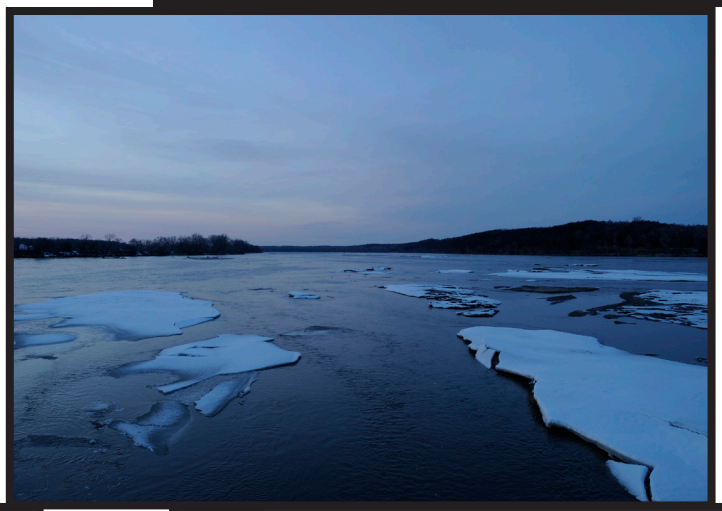
dataset, and then build their own timelapse sequence that can be paired with matching time- and location-specific drought, weather, and flow data. This innovative technology will offer immense teaching and learning opportunities for scientists and students alike.



A camera on the Lied Platte River Bridge near South Bend has captured high flows in 2011, drought in 2012, ice formation, and wildlife on the Lower Platte River.

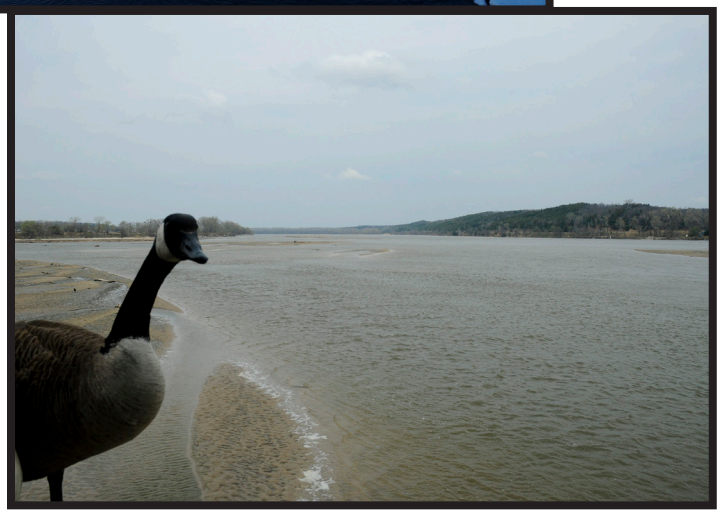
We imagine students will be excited to interact with our image dataset, learning about weather and climate, river processes, wildlife habitat, and water use. With grant support from the Nebraska Environmental Trust, we are forming partnerships with science curriculum developers who will help us create innovative media approaches to bring the Platte Basin Timelapse project into classrooms. The geography textbook will come to life, inspiring a new generation of scientists, artists, and community leaders.

Ultimately, we are storytellers. The stories we're telling are about our water. Where does it come from? How is it used and managed? Who makes these decisions? And why? Through still and timelapse photography, video, audio, and interactive graphics and maps, we can examine the growing and competing demands of water in agriculture, municipalities, power generation, recreation, and wildlife in the Platte Basin.



By collaborating with other public and private groups across the basin, we hope to tell the underreported yet critical stories about water, and help build a community around our watershed.

Visit www.plattebasintimelapse.com to learn more and stayed tuned for continued developments.



News Around the LPRCA

Reducing Flood Risk Along the Lower Platte River

By Mitch Paine, Department of Natural Resources

An image captured of the 1908 flood of Salt Creek in Ashland shows that flooding has been and will long be a hazard for communities of the Lower Platte Corridor.

The "8 reasons to protect the Lower Platte River" are woven together by the natural functions of the river. One of these important natural functions is flooding in floodplains. Every stream, channel, or river has a floodplain that is normally dry, but is inundated with water from overflowing river banks. Floodplains store floodwater, which slows the velocity of water surging downstream and filters the water that spills over riverbanks. Floodplains also serve as recreational resources, habitat areas for waterfowl, and areas for scientific study. All of the "8 reasons to protect the Lower Platte" rely in part on the protection of these natural floodplain functions.

The floodplain of the Platte, however, is a risky place to have a house or business due to the possibility of flooding. Participating in the National Flood Insurance Program gives communities a basic strategy to limit the risk to buildings from flooding. A variety of other community tools can be used to further reduce risk and protect natural floodplain functions. Zoning, comprehensive plans, and property buy-outs are common methods to accomplish these.

Zoning provides a framework for responsible development and use of land. Community floodplain management regulations are found here, but zoning regulations also allow communities to provide additional protection from flood risk. Areas zoned with low density requirements will overall suffer less damage in the event of a flood. Communities can also incentivize development in ways that set aside floodprone lands, but allow for the desired number of structures. These strategies include density transfers, planned unit developments, cluster development, and greenway/setback rules that can be used to create open space out of floodplains. This open space can be used for recreation, fishing, and wildlife habitat and make housing developments safer from flooding. Zoning regulations also have the ability to harmonize neighboring uses and potentially the negative effects of development upstream that could cause increased flooding.

Another tool that can be used to reduce flood risk long-term is the comprehensive plan. Most communities in the Lower Platte River watershed have a comprehensive land use plan. These plans provide long-term strategy for where to develop, how to develop, and the connective features of growth, like infrastructure. This is the true key to having resilient communities along the Platte River: understanding where the riskiest places to build area are and setting a long-term goal to avoid these areas. Long-term strategies are needed to also protect natural floodplain functions through preserving open space in communities. Comprehensive plans are processes and documents where the 8 reasons can be discussed as they relate to each other. As we see all along the Lower Platte, mining operations often become wildlife habitat, recreational spaces, housing developments, and fishing spots. Understanding and acknowledging the flood risk in these areas can make all of the uses safe and can ultimately protect lives and property from flooding.

Other techniques to reduce the risk from flooding and protect natural functions include building-specific activities. One of the most effective tools that community floodplain managers can use is to simply purchase a floodprone property and deed-restrict the property to be open space in perpetuity. Often, funds for these projects come from FEMA

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News Around the LPRCA

The Recent History and Near Future of the Schuyler 205

By Jennifer Salak, USACE

In the early 2000's the city of Schuyler and the Lower Platte North Natural Resources District (NRD) approached the U.S. Army Corps of Engineers, Omaha District about conducting an initial assessment of Platte River flooding and evaluating levee alternatives to reduce flood risks along the southern portion of Schuyler. Upon determination of federal interest in pursuing a comprehensive feasibility study, Schuyler and the NRD agreed to be cost-share sponsors with the Omaha District for a Section 205 flood risk management feasibility study. As the Platte River study progressed, a major flood from Shell Creek in May 2008 caused property damage in the northeastern part of the city. Due to the extensive flood devastation, Shell Creek was added to the feasibility study.

While residents were completing repairs to their homes and businesses from the 2008 flood, they were hit again in 2010 with flooding from the north from Shell Creek and from the south from Lost Creek, a minor tributary of the Platte River.

Schuyler officials, Lower Platte North NRD representatives, USACE, and TJC Engineering break ground on the Schuyler flood risk management project. Photo by Jennifer Salak, USACE Outreach Specialist

In 2011, with input from the cost-share sponsors and the public, the Omaha District Corps of Engineers completed the Section 205 feasibility study which identified an economically-feasible project consisting of two levee systems, one to reduce risks from Shell Creek flooding and another along the south side of the city to address Platte River flooding.

In September 2013, the Louisville, Kentucky-based company TJC Engineering, which has extensive experience working with other USACE districts around the country, was awarded the $3.2 million contract for Phase 1 of the project; a new 2.18-mile levee located north and east of Schuyler designed to reduce flooding risks posed by Shell Creek. On March 27, 2014, a long awaited day for the city of Schuyler, the NRD and the Omaha District, the three partnering agencies broke ground on the project.

"Collaboration on this project has been key, and every single member of the Project Delivery Team has been fully engaged with the sponsors, landowners impacted by the project and residents affected by years of flooding," said Mark Nelson, USACE Project Manager.

Tommy Aldmeyer and Andrew Barry, both Geotechnical Engineers in the Omaha District, spent many hours in the field working with landowners laying out a final levee alignment that would have the least impact on each person's property. They also worked extensively with landowners to ensure their irrigation equipment would continue to be able to water crops on both sides of the levee.

Omaha District Hydraulic Engineer, Curtis Miller, worked with residents of Rogers, a community of 95 people located 8 miles downstream from Schuyler, to demonstrate through hydraulic modeling that the Shell Creek levee would not contribute to an increased likelihood of flooding.

"Other team members played an integral part in getting this project to the groundbreaking," said Nelson. "Candace Akins in Real Estate negotiated tirelessly with the city, the NRD and landowners to obtain the required real estate for the project. Christian Davenport in the District's Engineering Division coordinated with the Nebraska Department of Roads to ensure no traffic safety concerns were created with the road raise. Tom Gorman, also in our Engineering Division, worked with the Federal Emergency Management Agency to make sure the new levee would comply with that agency's floodplain regulations."

Phase 1 construction of the Shell Creek levee is expected to be complete this fall. Phase 2, once funded, will involve constructing a new levee, approximately 2.5 miles long, south and west of Schuyler along Lost Creek. Currently the Omaha District is working on the design of the Platte River levee. Once the total project is fully implemented (Phase 1 and 2), the risk of flooding in the majority of Schuyler will be greatly reduced, and the potential for annual flood damages will be lowered by approximately $1.9 million.

News Around the LPRCA

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grant funds. Beatrice and Bellevue have completed large projects that have purchased dozens of structures and left open space in the floodplain. Acquisition projects like these reduce any future flood loss to that building and to the people who might inhabit it. Acquisition projects also provide a small piece of open space where floodwater can be stored to reduce downstream flooding.

All of these tools are and can be used by communities along the Lower Platte to reduce risk from flooding and contribute to natural floodplain functions. Doing so makes communities safer and contributes to the relationship between the "8 reasons to protect the Lower Platte River." The Nebraska Department of Natural Resources provides technical assistance to Nebraska communities on any floodplain management related topic. Contact Mitch Paine (Mitch.Paine@nebraska.gov) or John Callen (John.Callen@nebraska.gov) for more information.

Platte River Recreation Planning Study Nearing End

By Joshua Price, LPRCA

In May of 2013 The LPRCA partnered with The Nebraska Game and Parks Commission and The U.S. Army Corps of Engineers to develop The Platte River Recreation Planning Study. Here we are a year later and we are happy to say that the study is rounding the final corner and is anticipated to be completed in a few short months. The completion of the Recreation Planning Study will give rise to many new tools for recreational users of the Platte as well as decision makers region wide.

Through the development of the Recreation Plan for the Lower Platte River, we hope to identify all recreation areas, facilities, and privately owned businesses such as outfitters and others. Additionally we hope to identify additional areas that could be developed into motorized or non-motorized boat access, parks or other recreational areas. The final piece of the plan will identify "time of travel" for paddlers under certain flow conditions as well as outline the development of an interactive viewer and mobile app so that the information is easily accessible. Our goal is to bring more potential recreational users to the Platte and surrounding communities by providing them the information they need to make full use of the private and public resources available to them.

In accomplishing all this, we will effectively be working towards establishing a Platte River Water Trail which will demonstrate the vast network of recreational facilities on and around the Lower Platte River and how they are all interlinked. Once a water trail is established many new opportunities exist such as the possibility of being designated a National Water Trail System. Such designation comes with a myriad of benefits to the Lower Platte River and local communities such as:

-national promotion and visibility
-mutual support and knowledge sharing as part of a national network
-opportunities to obtain technical assistance and funding for planning and implementing water trail projects
- positive economic impact from increased tourism
-assistance with stewardship and sustainability projects
-increased protection for outdoor recreation and water resources
-contribution to public health and quality of life from maintaining and restoring watershed resources

This early in the development process it is not possible to say that a potential Platte River Water Trail would receive such a designation. There are many entities involved in deciding if that is even a designation that is desired to be pursued. It is just one example of the many possible beneficial long-term outcomes of The Platte River Recreation Study. In the world of natural resource management the old adage, "If you fail to plan, you plan to fail" holds true. No action can be or should be undertaken without thorough planning. This is why the LPRCA and its partners seek out and participate in studies such as The Platte River Recreation Study. These studies when complete are provided to area decision makers and become tools of change that serve as the first step in a much bigger process of planning that coincide with our mission to protect, enhance, and restore the vitality of the Lower Platte River's resources.

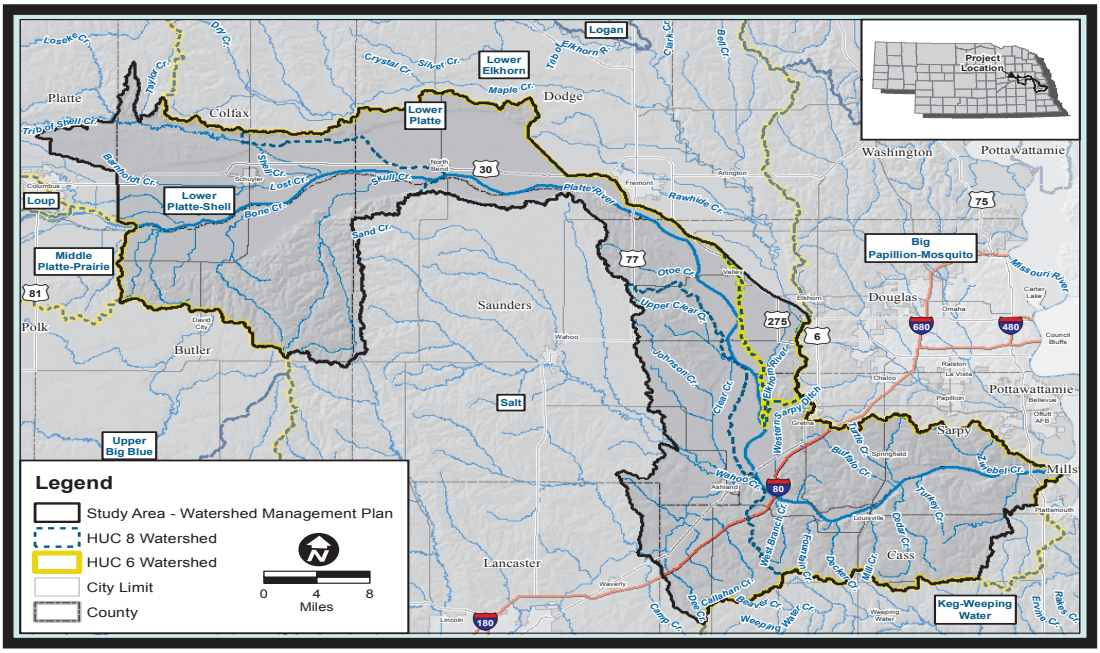
LPRCA Project Updates

Sandbar Dynamics Study

The LPRCA received a second year of funding from the Nebraska Environmental Trust for the study of spatial and temporal dynamics of sand bars in the Lower Platte River. The study being conducted in partnership with the United States Geological Survey (USGS) Nebraska Water Science Center. The goal of the study is to better understand how and where sandbars tend to form in the lower Platte River. Understanding those dynamics can help us better understand critical areas for habitat of the threatened and endangered species found in the lower Platte River, where infrastructure can be best sited, and the overall function and health of the river system. The study is slated to continue through 2017. A report of the initial pilot study can be found on the LPRCA Website. We thank the Trust for their support!

Watershed Management Plan

The LPRCA continues work on the development of a Watershed Management Plan for the lower Platte River Corridor. The plan's development is being funded by the Nebraska Department of Environmental Quality's 319 Nonpoint Source Pollution program. HDR Inc has been assisting the LPRCA with plan development. The plan which will assist us in better understanding water quality concerns and identify best management practices that can voluntarily be put in place to help reduce pollutant loads within the lower Platte River and associated smaller watersheds. The plan should be available on-line by late summer 2014 with anticipated implementation of the plan beginning in 2015.



Real-time Water Quality Monitoring Network

The LPRCA partners with the United States Geologic Survey (USGS) Nebraska Water Science Center to provide real-time water quality data at four points within the Corridor. Turbidity, temperature, dissolved oxygen, specific conductance in addition to stream flow at the Platte River at Louisville, Elkhorn River near Waterloo, Salt Creek at Ashland, and Shell Creek near Schuyler. Real-time Nitrogen is also available at Louisville. The data is now available real time at http://ne.water.usgs.gov/lowerplatte/. Predictive data is currently being developed with funding from the Nebraska Environmental Trust and should be available later this year. The water quality data is available in real time from April through October with historic data available throughout the year.