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 Fargo, ND 58103
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Mark your calendars! River Keepers 2006 schedule of events:

Water quality monitoring training on Monday, April 17 from 1 p.m. - 3 p.m. at the S.S. Ruby ticket booth in Viking Ship Park.

Tour the Living Lab before River Keepers Annual Meeting on Thursday, April 27 from 4:30 - 6:30 p.m.

River Keepers will lead **Walk This Way** at 7 p.m. on Tuesday, May 9.

On-the-water river cleanup from 6-8 p.m. on Thursday, May 11 from Midtown Dam to North Dam

S.S. Ruby Boat Tours and Canoe/Kayak Rentals regular operating season runs May 26 - September 3. For more information, call 701-793-RUBY.

Lil' Fishermen's Derby & Clinic and Race the Red scheduled for Monday, June 5 at Dike East.

Canoeing on the Red from Lindenwood Park to Viking Ship Park on Friday, July 7.

Police Community Picnic scheduled for Tuesday, July 11 in Island Park.

RiverArts, Tuesday Nights in Moorhead, scheduled for July 18- August 22.

Canoeing, Cooking and Camping, a women's weekend on the Red River, is scheduled for July 21 - 23.

2006 Membership - If you haven't done so already, it's time to renew your support of River Keepers!

SEND FORM BELOW TO: River Keepers, 325 7th St. S., Fargo, ND 58103 - 1846

Name _____ Address _____

City _____ State _____ ZIP _____

E-mail: _____

Level of participation (check one): Steamboat \$500+ Skiff \$100

Canoe \$50 Kayak - \$25

OR GO TO:
www.riverkeepers.org
 to donate online!



2005 Annual Report

"Promoting a renewed vision for the Red River of the North."

A NOTE FROM THE PRESIDENT

What might be the impact on our quality of life if Interstate 94 and 29 were impassable for three months? Obviously it would be a disaster, as our region is dependent upon these sources of transportation. Similarly, what might be the impact on our quality of life if the Red River of the North dried up or became polluted to the point that the water was unusable?

This is a scenario that needs to be considered very seriously by all of us that drink and in many other ways use the waters of the Red. Most of us remember the disastrous flooding of 1997 and 2001. Not many of us remember the Red's trickling pace during the 1930's. With the majority of the residential and commercial water for Moorhead and Fargo being drawn from the Red River, we need to understand this precious resource and do all we can to protect its future.

There are dozens of governmental units as well as many non-profits that have vested interests in the Red River. One of the roles River Keepers plays is to serve as a catalyst to bring governmental, business, and private citizen interests together in efforts to preserve and enhance the perception, safety and use of the Red River of the North.

Much has been accomplished in the last fifteen years since the inception of River Keepers in 1990. Dams have been retrofitted, bike/walking trails developed, youth watershed education greatly expanded, access to natural resources enhanced, thoughtful river shore development encouraged, and the list goes on. These collaborative efforts encouraged people to realize more and more how important the Red River is, and how it enriches their lives.

The future of the Red River, and subsequently the quality of life in the valley, is in our hands. Please continue to join with your friends and neighbors in supporting the efforts of River Keepers. Together we have and will continue to make a difference.

Gene Boyle



Board

Gene Boyle - President
 Pamela Schaefer - Vice Pres.
 Rocky Swanson - Sec. Treas.
 Allan Ashworth - Past Pres.

Karl Bakkum
 John Dalen
 Mary Davies
 Dennis Flom
 Tom Moberg
 Dan Pullen
 Rick St. Germain
 Lucinda Swenson
 Jan Ulferts Stewart

Jennifer Walz (ex-officio)
 Brad Wimmer (ex-officio)

Staff

Bob Backman
 Executive Director

Christine Holland
 Project Coordinator

2005 Project Highlight: Red River Water Festival

Having youth get an early exposure to the importance of water is significant in the future health of the Red River Basin. One of the best ways to educate our youth is through a water festival where they participate in hands-on learning and are exposed to industry and agency water experts. In 1999, River Keepers initiated the first ever youth water festival in the F-M area with an attendance of 350 students. With the assistance of many project partners, the water festival has expanded to include the majority of the 4th grade students in the two local watersheds. The 2005 festival held at the end of September had almost 1600 students attending over a four day period. The water festival is a finalist for a Minnesota Environmental Initiative Award in the environmental education category.



Students learn about storm drains and non-point source pollution during a "River Crime Lab" activity.

Numbers

Community Members: 141

Volunteer Hours: Over 700 people contributed over 3400 hours to River Keepers' projects and committees.

Presentations: Presentations were made to over 40 groups, reaching over 3800 people.

Displays and Parades: We were at 10 special events, reaching over 7500 people. The S.S. Ruby was lit up at the Holiday Lights Parade and Holiday Lights in Lindenwood which was viewed by almost 20,000 people.

Awards

Volunteer of the Year – Ed Janzen

Education Award – Wayne Goeken, Red River Basin River Watch

Development Award – NDSU Landscape Architecture

Friend of the River Award – Senator Keith Langseth



Senator Langseth (left) accepts award from Bob Backman

Finances

Sustaining Sponsors: Buffalo-Red River Watershed District, Southeast Cass Water Resource District.

Government Members: City of Fargo, City of Moorhead, Clay County, Fargo Park District, Moorhead Public Service.

Income	Actual
Appropriation	\$ 88,483.36
S.S. Ruby	\$ 7,145.00
Membership	\$ 11,644.27
Grants	\$ 15,126.67
Sponsorship	\$ 12,038.59
Sublease	\$ 8,712.00
Misc.Income	\$ 1,260.41

Total \$ 144,410.30

Expenses	
Payroll and related	\$ 107,911.52
Office Expense	\$ 28,409.86
Project Expense	\$ 25,993.95
Misc. non-office	\$ 13,454.19

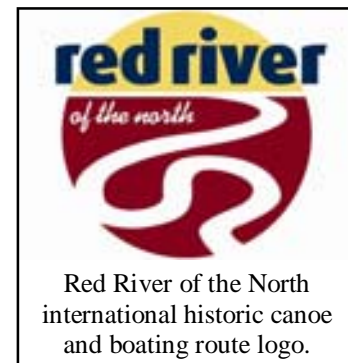
Total \$ 175,769.52

Net Income (Loss) \$ (31,359.22)

New in 2006!

- Three tree plantings involving over 1000 plants will be held at the Living Lab with help from project partners, Red River Riparian Project, Cass County Soil Conservation District, and Cass County Electric.
- An eagle nesting site will be installed at the Living Lab by partner Cass County Electric.

- Native plant displays will be designed and installed at the Living Lab thanks to a grant from the Environmental Protection Agency.
- A wild bird native plant garden will be planted at the Living Lab thanks to the Schilling Fund at the F-M Area Foundation.
- Working with F-M Metropolitan Council of Governments and NDSU School of Natural Resources, an extensive survey of recreational river users will be conducted.
- Plans are being developed for a 'sister' river in Moldova in Eastern Europe.



- Minnesota Department of Natural Resources (MN DNR) contracted with River Keepers to develop canoe and boating route maps from Georgetown to Grand Forks and Grand Forks to Pembina.
- River Keepers is working with MN DNR on adding canoe/kayak access sites and portages on the Red River.

quality, but individual parameters can vary over the course of the year due to factors such as landscape characteristics, stream flow, season, land use, and natural differences in geology and hydrology. Water in the Red River has always been turbid, a result of the fine suspended sediments (clay and silt). Only under extreme circumstances would parameter levels be an impediment to recreation or be harmful to river life.

There are many monitoring efforts in the basin, some specific to individual goals, which are conducted by local, state and national agencies and organizations. River Keepers, along with volunteers, monitor the Red River in the Fargo-Moorhead area to measure the effect that the community has on the river system. The River Watch program utilizes high school students in the basin to monitor rivers in their own communities. It's a highly effective program but needs additional funds for expansion.

The utilization of other monitoring techniques, flow data in un-gauged watersheds, and the integration of currently available data call for further investigations and research.

Water Supply

The population of the Red River Valley continues to grow. For example, from 1960 to 2000 the population of Cass County almost doubled from about 67,000 to 123,000. From 1990 to 2000, the population increased by about 20,000. Most of this growth has occurred in the metro areas of Fargo and West Fargo. Fargo relies on the Red River and to lesser degree the Sheyenne River for its water supply. West Fargo relies on groundwater for its supply.

Moorhead uses the Red River and groundwater. The Red and Sheyenne Rivers are susceptible to wide fluctuations in flows due to the size of their drainage areas and the variable climate of the region. The aquifer levels in West Fargo are declining. In 1936, the Red in Fargo had no flow for 175 days. While floods have received a lot of attention in recent years, potential drought impacts have not received much public awareness until recently. Many experts are now engaged in studying the water supply and demand conditions of the Red River Valley. A severe water shortage in the valley would have serious consequences.

In December of 2005, the Bureau of Reclamation representing the Secretary of the Interior and the Garrison Diversion Conservancy District representing the State of North Dakota issued the *Draft Environmental Impact Statement for the Red River Valley Water Supply Project*. This report and its supporting documents investigate the water quality and quantity needs of the Red River Valley and the alternatives to meet these needs. More information can be obtained at www.rrvwsp.com

Commercial Use

Fargo and Moorhead were established at their current locations to take advantage of the Red River for commercial use in the form of



S.S. Ruby boat tours

steamboat travel. For about 50 years steamboats traveled up and down the Red carrying passengers, grain, furs and other freight. Connections with the oxcart system and eventually the railroad increased for a time the use of this method of transportation. As other forms of transportation became more efficient and dams were built, steamboats faded from the scene.

Today there is limited use of the Red for commercial purposes. It's not used for transportation except by a limited number of recreational users. A few business use the water in their manufacturing and some use is made of the water for irrigation. Municipalities use the Red for domestic water supplies.

As the recreational potential of the Red is redeveloping, we are seeing a few commercial fishing guides and beginning interest in outfitting for canoe trips. River Keepers still operates the only tour boat on the Red River in the U.S. Views of the Red have increasing value as housing continues to be constructed adjacent to the river. Urban redevelopment is taking place with a focus on the river.

dams in the basin have been eliminated by these projects.

Giant lake sturgeon that once grew to over 400 pounds were eliminated from the Red River Basin by over fishing and by dams that blocked their spawning migrations. These fish could return if reintroduction and habitat restoration efforts are successful. Since sturgeon and other fish migrate hundreds of miles to spawn, it is critical that long reaches of un-dammed river is available. Plans are currently being developed to modify or remove the three unmodified dams remaining in the United States at Christine, Hickson and Drayton. River Keepers has been active in encouraging this work to be completed.

Recreation

Where once there may not have been time for water recreation, increased urbanization in the early 1900s lead to a greater demand for water recreational activities. In the Fargo-Moorhead area more people began to use the Red River for fishing, swimming and canoeing. Dommer's Boat House rented canoes and boats, there was a small tour boat, and swimming areas were identified.

However, dams with dangerous undertows, muddy banks, the population's lack of swimming skills, and poor sewage treatment caused local officials to warn against using the Red for recreation. Then highways were improved and car ownership increased which made trips to "the lakes" easier. Finally community swimming pools were built and recreational use of the Red was almost nonexistent for 50 years.



Recently, recreational use of the Red is increasing due to the following factors:

- ◆ changing attitudes about the Red
- ◆ excellent sewage treatment systems
- ◆ dam retrofitting
- ◆ the national popularity of water based recreation
- ◆ increased infrastructure such as boat ramps
- ◆ additional riverfront recreational trails

In the past five years with the leadership of River Keepers through its dedicated members, the State of Minnesota has declared the Red an official Canoe and Boating Route, and printed recreational maps. Last



Barnesville River Watch students monitoring Hay Creek. Photo by Wayne Goeken

year, with the encouragement of River Keepers, the F-M River Riders, a Red River based recreational club, was established. The State of Minnesota has plans for several more boat ramps in the area and the development of additional maps.

Water Quality

The residents of Fargo-Moorhead are connected to the Red River in many ways: drinking water from the Red River; returning wastewater to the Red River after treatment; and placing rain and snow flows untreated directly to the Red River through the storm sewer system. Pollutants in run off can include vehicle fluids, car-washing detergents, pet wastes, construction debris, and excess herbicides, pesticides and fertilizer.

Early residents of F-M deposited sewage and garbage directly into the river when early sewage treatment was spotty. With the separation of storm and sanitary systems, and the construction of high quality treatment facilities, the water in the Red River is generally of good

2006 Members as of 4/4/06

If we have made a mistake in this listing, please contact us.

- | | | | |
|-----------------------------|----------------------------------|-------------------------|----------------------------|
| Matt Ahonen | Jolene Beckman & Fred Sternhagen | Jay and Becky Leitch | Schlossman |
| Dick Alsop | Jody French | Vern Hunter & Leo Grobe | Brad Schlossman |
| Noel Anderson | Sylvia Garcia | John & Bess Manesis | Donna Schneider |
| Brian Arett | Brian Gibson | Ken & Fran Mattson | Donald & Charlene Schwert |
| Allan Ashworth | David Givers | Tom McGeehan | Davis Anthony Scott |
| Randy & Toni Bach | Paul Gleye | Cliff McLain | Margaret Scott |
| Lynda & Bob Backman | Wayne Goeken | Roger Minch | Larry Seljevold |
| David & Jan Bailly | John Grosen | Tom Moberg | Richard Shaw |
| Karl Bakkum | Jake Gust | Hugo Moeckel | John Silliman |
| Howard Barlow | Drue Haarsager | Celeste Moltzen | Mark Sinner |
| John and Cecelia Beecher | Cathy Hanson | Dawn Morgan | Mike & Kim Slette |
| Joel Belgum | Tim Harms | Barry & Susan Nelson | Richard Solberg |
| John Bennett | David Hartson | Tim Nephew | Rick St. Germain |
| Mary Alice Bergan | Alice Hauan | Mark Nerland | John & Sherri Stern |
| Wayne Beyer | Joel & Deb Haugen | Ken & Gloria Nygard | Bob Stein |
| Mark Bibelheimer | Linnae Hegg | Maureen O'Donnell | Steve & Kari Stoner |
| Gordon Bierwagen | Sue Heidenreich | Julie Olek | Janet Stringer |
| Mark Bittner | Russel L. Helmeke | Jim Oliver | Paul Suomala |
| Mark Blonigen | Bobbi & Rick Henderson | Jim Olson | Roland and Mary Swanson |
| Larry & Jenice Boulger | Richard Hentges | Steven Olson | Robert & Lucinda Swenson |
| Gene & Sue Boyle | Marty Hoag | George & Kit O'Neil | Hank & Lynn Tkachuk |
| Keith Burk | Christine Holland | Michael Orchard | Tom Tolman |
| Ron & Kim Burd | Neil Howe | Diane & Larry Ornberg | Conrad Toni |
| Elizabeth Bushell | Stanley & Godela Iverson | Nancy Otto | Jan Ulferts Stewart |
| Mac Butler | Ed Janzen | Lloyd & Bev Paulson | Chuck & Karen Vaala |
| Olaf & Verna Cartford | Mike & Deb Jenkins | Carole Pederson | Tom & Nancy Vesel |
| Donna Chalimonczyk | Joan Jirik | Don Pederson | Mark & Betsy Vinz |
| Mark Chase | Gene Johnson | Vern Pederson | M. Daniel Vogel |
| Wayne Christianson | Doug Johnson | Merrill Piepkorn | Mark Voxland |
| Jim Norris & Clair Strom | Jessica Johnson | Dewy & Margery Possehl | Trudy Wanner |
| Al Coen | Matt Kania | Arlette Preston | Mike Weideman |
| Ross Collins | James & Margit Kegel | Dan Pullen | Steven West |
| George Cook | Curtis Kesselring | Doyle Ranstrom | Jim Wilkins |
| Marjorie Corner | Don Kilander | Tim Ray | Tom Williams |
| K.W. Covey | Wade Kline | Rose Reis-Jackson | Rhonda Wilson |
| Hugh Cowan | Rosi Klobberdanz | Mike Rentfrow | Brad Wimmer |
| Bruce Dahl | Ken Knudsen | Lou & Jerry Richardson | Lauri Winterfeldt - Shanks |
| Mary Davies | Dave Koland | Roger Richman | Steve & Leann Wright |
| Tom Dawson | Bill Kranzler | James Ross | Lance Yohe |
| Mr. & Mrs. Warren Diederich | Michael Lacher | Helen Rudie | Rose Young |
| Chad & Jill Eddy | Neoma Laken | Mike Rufer | Steve Zaiser |
| Janet Feder | Morrie and Ruth Lanning | Ron & Nancy Saeger | Steve & Kim Zimmerman |
| Dennis Flom | David & Anne Larson | Travis & Heidi Sanger | |
| Sara Forness | Doug Leier | Pamela Schaefer | |
| Rick & Nancy Foss | | Steve & Jan Schlaht | |
| | | Wm, Jr. & Mary | |

What is a healthy river?

Adapted from *Citizens' Agenda for Rivers* produced by American Rivers

Just as there is no single measure for human health, there is no single measure for river health. Rather, a healthy river is comprised of many facets – biological, physical, chemical, and even human. It does not have to be a pristine river, untouched by any human development or activities. But a healthy river does have to be resilient and able to recover from natural and man-made disturbances.

A river's health is measured on a continuum, just as a human's health is. A river in the wilderness may rank the highest, but a river flowing through a major metropolitan region is not inherently unhealthy. Rather, the traits of an ecologically healthy river will have certain components that fall within a range that allows the river to maintain its ecosystem functions.

Fundamental characteristics of a healthy river include:

- ◆ **A natural flow that varies in magnitude, frequency, duration, timing and rate of change.** A natural flow regime is a critical component for a healthy river because the flow of water provides the base on which all other river functions are built. The plants, fish, and wildlife in any given river have evolved to adapt to that river's unique rhythms.
- ◆ **Transportation of sediment and nutrients.** Rocks, gravel, sand, silt, and organic debris are important components of a healthy river, creating floodplains, sandbars, riparian areas, and nourishing a river's bed and channels. A healthy river in equilibrium does not allow too



much erosion or excessive scouring of the riverbank and riverbed.

- ◆ **Strong and varied plant communities.** Native plant species provide critical habitat for fish and other riverine animals, regulate water temperatures, prevent excessive erosion of riverbanks, and can remove pollutants from river water. Vegetation as it decomposes is also an important source of nutrients and habitat.
- ◆ **Productive and diverse habitat that can support numerous animal species.** The natural movement of sediment throughout a river creates riffles, pools, side channels, and backwater areas providing both spawning and rearing habitat for many species of fish.
- ◆ **Good water quality.** A healthy river has temperature levels, dissolved oxygen content, salinity, turbidity, hardness, acidity, and alkalinity (water pH) that are all

within a natural range for that river and its species. A healthy river will also have minimal amounts of pollution and toxics, such as pesticides, nitrogen, phosphate, fecal coliform, and heavy metals.

- ◆ **Many macroinvertebrates (bugs!).** Aquatic insects are the primary food for many riverine species. Abundance and diversity of insect species can be a strong indicator of river health.
- ◆ **A community that protects it through wise management and community planning.** For example, community groups work to ensure that a new development is as river-friendly as possible or organize river clean up days and engage other community members in issues related to river health. A healthy, caring community is an essential facet of a healthy river.

more obvious, in areas where cropping or development has cleared the river bank forest. The native vegetation holds the soils together with their deep root systems and pulls water from the soils that would otherwise contribute to instability. Locally, riverside development has led to increased instances of river bank failure by replacing deep rooted native plants with shallow rooted Kentucky bluegrass and adding water to the soils through lawn watering and septic systems.

Stopping the natural course of erosion and slumping along the Red River is considered by some to be an exercise in futility, but there are steps that can be taken to keep human influences from making the problem worse. Several entities in the Red River Valley have been working with landowners to repair slumped river banks and restore native riparian forests. Other entities, such as Cass County, have been working to implement improved zoning that moves development back from the river banks to decrease the potential for slumping and the infrastructure damage that it causes. River Keepers has been contributing to these efforts through various educational activities, including the Living Lab.

Urban Connections

In 1990, the RUDAT Study identified the need to connect the urban community to the Red River. Since then, River Keepers has been involved in many projects that move us closer to that goal. The recently completed Main Avenue Bridge project has several features that meet our objectives. They include interpretive plaques, large signs identifying the Red, under bridge lighting, an on-the-bridge plaza, flags and large accessible walk-



Main Avenue Bridge

ways connected to the river level. The City of Moorhead constructed a plaza adjacent to the bridge which connects the downtown to the river. In the summer of 2006 there will be two additional projects associated with this project. A large number of trees will be planted along the river adjacent to the bridge and the Grand Meadow will be completed. The Grand Meadow will be a public gathering spot on the SW side of the bridge. Traditionally, bridges were thought of as a way to get over an obstruction such as a river. Much thought and planning has gone into this bridge making it "connected" to the Red.

Other projects include the new Fargo downtown library which acknowledged the importance of the river when determining their location. Also scheduled for completion in 2007 is the riverfront trail in the Oak Grove area. This trail segment will be the final link of a long planned for continuous, connected trail. The combination of the two downtown pedestrian bridges, this new segment and existing trail will complete a circle route. Users will be able to walk in two

cities/states, cross the river twice and return to where they started. Planned enhancements include parking, interpretation and native plantings.

Not all urban connection projects involve construction. River Keepers participates in several activities such as "Walk this Way", a program to get people out on our urban trails. Our S.S. Ruby tours and canoe/kayak rentals provide a way for passenger to see and connect to green space in the downtown urban community.

Dams

One dam at a time, the Red River of the North is slowly being reconnected to make it safer for people and healthier for fish and other river life. Since Fargo's Midtown Dam was converted to rapids in 1999, another four dams have been modified and only three of the original nine remain on the Red. This effort along with the removal or modification of another 19 dams on the Minnesota tributaries is restoring critical migration routes and spawning habitat for walleyes, catfish, lake sturgeon and many other species. Dangerous undertows that were responsible for roughly 100 deaths below



Fargo-Moorhead's North Dam

such as lift stations have been hardened, emergency plans have been developed or refined, dikes have been built and planning is underway for others.

However flooding in the Red River Valley is not just a local issue. Because of our geography it's a basin-wide issue. So, in its November 2000 report, *Living with the Red*, the International Joint Commission (IJC) made twenty-eight recommendations to governments and endorsed another thirty recommendations of its International Red River Basin Task Force without change. These recommendations were aimed at reducing, mitigating, and preventing harm from future flooding in the Red River Basin. The IJC noted that there is no single solution to the challenge and that comprehensive, integrated, binational approaches must be pursued and implemented. The complete report is at <http://www.ijc.org/rel/boards/rrb/rbtf.html>

Since the 1997 flood, governments at all levels have made changes in flood-related policies, funded new programs, invested in research into many aspects of flooding, and supported the establishment of new organizations such as the International Water Institute. Efforts focus not only on major floods such as that of 1997, but also on smaller tributary floods.

The recommendations that have achieved the most success are those that involve construction of a structural measure identified in the IJC report, even if that work requires collaboration at the federal, state or province, and local level. A second group of successful recommendations relate to specific recommendations aimed at a specific agency, for example the sig-

nificant improvements made towards flood forecasting.

The recommendations that have achieved relatively little success are those that involve multiple agencies and objectives. Apparently it will take considerable effort to achieve the level of integration and cohesion on flood management that the IJC envisaged. Some think this needs to be pursued with some urgency before other priorities begin to compete for attention and before another major flood occurs elsewhere. Significant interagency and intergovernmental cooperation is needed before the long-term resiliency of the basin can be assured.

Riparian Restoration

The condition of the banks of the Red River vary considerably along its 550 mile course. Geologically, the Red River is quite young at only about 10,000 years old. Because of its youth, the Red River, as all rivers do, is cutting its path through a floodplain. However, the floodplain of this river is an abandoned glacial lake bed. The lake bed is extremely flat and



Red River Riparian Project restoration site at Wild Rice River.

therefore, the gradient or slope of the Red River is quite low; less than one half foot per mile in some places. This low gradient leads to a high sinuosity or meandering of the river. Without a well established or mature valley, the river moves somewhat unconstrained laterally across the valley. Underneath this lake bed or valley are very weak clays that were deposited as lake sediments. These clays are subject to shrinking and swelling and become plastic when saturated. All of these factors contribute to the banks of the Red River being naturally unstable and subject to frequent slumping and rotational failure. Changes made in the Red River Valley during its settlement in the last 100 years have exacerbated this natural river process.

In the Fargo-Moorhead area, the steep river banks and increased meandering lead to more frequent bank erosion and slumping. Even where the river banks remain forested, slumping occurs, especially on the outside of meanders where the water table is high and river erodes closer to the bank. This is

2005 State of the River Report

Acknowledgements

This State of the River Report is the result of the work of many individuals from several agencies and organizations. Their expertise, experience, and their willingness to assist is greatly appreciated. Any mistakes are those of the River Keepers organization and not those of any contributing author. Many thanks to the following contributors: Robert Halliday, consultant, Luther Aadland, Minnesota Department of Natural Resources; Dave Rush, Red River Riparian Restoration Project; Wayne Goeken, Red River Basin River Watch; Minnesota Pollution Control Agency; Minnesota Waters; United States Geological Society; and Rick St. Germain, Houston Engineering, Inc.

Introduction

Water has always been a significant factor in human civilization. Many of us are now removed from the environmental contact most of our forefathers had. For instance, most of us don't use an "outhouse" or draw water from a well. Our experience at River Keepers is that we have some in the community that now think water comes from the tap and that their practices, such as lawn fertilizing, have no connection to that tap water. River Keepers produced this brief State of the River Report and included it in our annual report as one of the ways we utilize to educate and inform area citizens about our Red River. Research shows Americans favor protecting our rivers, but they don't understand how they work and what they can do to keep them healthy. We hope this report provides you some of that information.

Land Use

The Red River of the North flows north about 545 miles from its source – the confluence of the Bois de Sioux and Ottertail Rivers in Breckenridge, Minnesota to Lake Winnipeg in Canada. Channel widths vary from under 200 feet to over 500 feet, with average depths from 10 to 50 feet. During its northward flow, waters of the Red River are joined by flow from 21 named tributaries.

What happens on the land affects water quality and quantity. Agriculture practices and impervious surfaces in our cities all have an impact on the Red.

Today, land use in the valley is predominantly agricultural thanks in part to the rich soils left behind by the retreating Lake Agassiz. The first recorded use of the valley for agriculture was around 1800 in the northern reaches of the valley. By the mid to late 1800s much of the valley was being farmed. What remained were large expanses of

wet or marshy areas. By the late 1800s Minnesota, North Dakota and Canada had formal methods in place to construct and maintain drainage ditches. The construction of ditches continues today. It has maximized the amount of land that can be brought into cultivation. Within the basin there are thousands of miles of principle drains and tens of thousands of miles of small laterals. Local governments, watershed districts, states and the federal governments all have drainage regulations. Controversy over specific drainage projects and methods sometimes exists when various interests collide. Most recently, water projects are being developed that appeal to agriculture, wildlife and flood prevention interests.

Flooding

In the Fargo-Moorhead area, a wide variety of efforts have been undertaken to protect the community from flooding. Numerous flood prone structures have been moved or relocated, infrastructure

(Continued on page 8)



Photo by F-M Metropolitan Council of Governments.

2005 River Keepers Activities

Youth Service Projects - River Keepers collaborated with Fraiser Hall, a Presbyterian youth group, Ellen Hopkins, Long-fellow Elementary, Madison Elementary, Agassiz Junior High, Horizon Middle School, Park Christian, Concordia College North Dakota State University and Minnesota State University Moorhead students on projects related to the Living Lab, storm drain marking program, Johnson Park nature trail, and the water festival.



Website - Updated www.riverkeepers.org to include fact sheets, project information, and online donation capabilities.



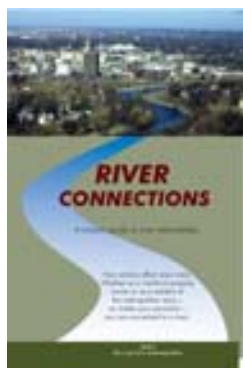
Water Quality Monitoring: Volunteers assisted in taking semi-monthly samples during ice-free conditions. The City of Fargo analyzed samples. Data can be found at www.fmriver.org.



Storm Drain Marking Program: We worked with City of Fargo and City of Moorhead to provide storm water education. Over 350 participants contributed over 700 volunteer hours to mark drains.



The Red River Water Festival: River Keepers continues to coordinate this award winning festival. This year 1,565 4th grade students in the Southeast Cass Water Resource District (SECWRD) and the Buffalo-Red River Watershed District (BRRWD) attended. Area River Watch students presented water quality activities. Sponsorship assistance is provided by SECWRD, BRWD, Project WET, and Clay County Soil & Water Conservation District.



River-Friendly Yard Management: Completed EPA grant to communicate the health of the Red River. We coordinated workshop with 60 participants.

River Keepers worked with the F-M Metropolitan Council of Governments to produce 3 issues of *River Connections*, a citizen's guide to river stewardship. Two of the issues were distributed to property owners along the Sheyenne and Red Rivers.

Riverfront Development: Worked with City of Fargo, Fargo Park District, and volunteers on a brush clean up along the river in downtown Fargo. We continue to advocate for connecting urban redevelopment to the Red.



S.S. Ruby: We recruited and trained crew, coordinated marketing, scheduled crew and charters, and maintained ticket booth and watercraft. Due to prolonged summer floods, the tours and rentals were open only 1/3 it's usual operating days.



Red River of the North International Historic Canoe Trail:

River Keepers developed and coordinated the "Recreation on the Red: Yesterday, Today and Tomorrow" workshop as one of the activities commemorating our 15th anniversary.

We're working with MN DNR on additional access sites and portages.



Race the Red: We organized and managed a fun and a competitive race. Thirty watercraft participated - 1/3 more than in the past.



We're working with MN DNR to develop canoe and boating maps for the sections of the Red River from Georgetown to Grand Forks and Grand Forks to the border.

We worked with Fargo Park District on a dock at Convent Landing and coordinated the ribbon cutting ceremony.

Riverfront Festivals: We worked with RiverArts to have activities in Moorhead Tuesday evenings. Participated in a community "art burning" event at Dike East.



15th Anniversary Celebration: River Keepers celebrated 15 years of "promoting a renewed vision for the Red River of the North."

Lions Conservancy Park: River Keepers continues to work with the Fargo Park District, Fargo Lions, and others on the development and maintenance of this park.

Living Laboratory: Volunteers provided over 200 volunteer hours for site cleanup and development. River Keepers received an EPA grant to add an arboretum and native plant displays. We solicited and received sponsorship from City of Fargo for a storm drain system display. Coordinated three work days for volunteers. We worked with City of Fargo to remove deadfall. We worked with Red River Riparian Project on a controlled burn and riverfront restoration planting that was cancelled due to a prolonged summer flood.



Dam Safety: Coordinated South Dam Retrofit Ribbon "Connecting". We coordinated the release of Lake Sturgeon as a symbol of connecting the river. We continue to work with Water Task Force and others on Christine and Hickson Dam issues. River Keepers worked with FM River Riders to install "Dam Ahead" signs at Christine and Hickson. We worked with MN DNR on using bonding bill money for dam portages and access sites. We continue to explore issues related to on-the-water safety including buoys and PFD usage.



Human Powered Water Craft Group - River Keepers coordinated an organizational meeting of the FM River Riders who have continued to meet.

Cavity Replacement Program: Received grant from North Dakota Game and Fish to continue the program. Wood duck boxes were maintained by NDSU Natural Resource Management Club, Concordia Student Environmental Association and an Eagle Scout Candidate.

