



Cleanup Review

Summer Issue 2009

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Reduce Your Stormwater Runoff

Eva Johnson, MCC Water Recreation Specialist

It's probably not a surprise to our readers that water from your property and street drains directly into the nearest lake or river. On its way, it picks up sediment and anything else that will float or can be pushed by the flowing water.

When the City of Minneapolis built its first sewer system in 1870, it drained sewage and stormwater directly into the Mississippi River. In 1922, the City of Minneapolis had begun to separate the sewers, especially around the city's lakes. After citizens' complaints of polluted waters, the Twin Cities opened the river's first sewage treatment plant in 1938. After this, new developments were required to separate sanitary and stormwater sewers.

As new sewer connections were added, pressure on the existing sewer systems increased. Heavy rain events caused the sewers, both stormwater and sanitary, to overflow into the rivers and lakes. By 1964, the Mississippi River was a virtual sewer channel, complete with toilet paper. (*CR Review Vol.2 No.2, 1993*). From 1986 - 2003, all combined sewers in the Twin Cities were separated.

However, new development and landscape changes have affected the system's water capacity. One of these changes was the increase in impervious surfaces. Building footprints



**Permeable Pavers Installation
Watersity Exhibit (U of M Arboretum)**

increased, streets were paved and curbs and gutters were added. Today, it is crucial to consider what is happening on already developed lots. For example, residents and



This boulevard rain garden collects and filters runoff before it reaches the storm sewers.

(Photo: Metropolitan Design Center)

businesses are constructing bigger buildings, garages and parking lots on increasingly smaller lots. According to the National Association of Home Builders (*Housing Facts, Figures and Trends for March 2006*), new home sizes have increased in the United States from 983 sq. ft in 1950 to 2,349 sq. ft. in 2004. The increase in impervious surfaces means that there is an increase of stormwater runoff.

The water washing down our streets and gutters carries floating trash and sediment. With all the impervious surfaces, it's no wonder that more trash and harmful chemicals travel to our rivers.

What can be done to make our cities more able to absorb stormwater? First, you can start at home. Any homeowner's objective should be to utilize your existing landscape to simulate a natural water system. The more that water percolates into our groundwater, the cleaner will be our lakes and rivers. In Minnesota, we are fortunate to have an abundance of water resources. But when polluted, it takes lots of energy to clean that water in order to use it for everyday activities such as drinking, cooking and bathing.

So what does a natural water cycle system look like? In short, water falls to the ground, and then either evaporates or recharges the groundwater supply. In our case, this same water is drawn out for human consumption.

How can you, as a homeowner, renter or business owner improve your property for the sake of better water quality? By treating the stormwater as a resource in your landscape design. Design to reuse your stormwater and direct it to areas of your property. Use it to water your plants. How? By collecting it in a rain barrel or positioning your gutter's downspouts into a raingarden, bio-swale or planting bed.

You can choose to install native landscaping in your yard. Native plants, after they are established, require less water (therefore less maintenance) and their deep root system helps filter runoff water as it soaks into the ground. Native plants still require attention, especially if you are looking for that maintained landscape look. However, a small effort will pay back great dividends in water conservation.

Even better, direct your gutter down spout into a raingarden. Raingardens are vegetative swales designed to collect and filter water during storm events. Metro Blooms, a non-profit, has do-it-yourself raingarden workshops throughout the metro area during the spring.

Another thing you can do to reduce runoff is to replace old, broken concrete with permeable pavers. In our harsh climate, it is argued that permeable pavers cannot be shoveled or plowed easily. From talking to local snowplow companies, they tend to dislike them, but the pavers can be plowed easily with a rubber blade attached to the plow.



Trench Drain Example

This is especially important because driveways tend to have pollutants such as motor oil, sand and salt. Rain washes these pollutants into our waters. Driveways can be made more porous when being rebuilt. Water is able to penetrate through the openings between pavers and flows directly into the ground. Even though the cost may be higher, these pavers are becoming more standard in the industry. The overall benefit to our groundwater, lakes and rivers is priceless.

If porous pavers are not attainable, consider installing a trench drain near the end of your driveway. Water running down the driveway drains into a grated trench and travels to a vegetated area.

Stormwater runoff can also be reduced by planting along the



Illustrated example of water-friendly landscape features.

property line. Talk with your neighbors and educate each other about stormwater runoff. Decide together to plant (or dig a swale) along the property line. This not only provides privacy for both lots but it allows water from the roof and other impervious surfaces infiltrate the soil. Instead of every house in your neighborhood having a combined lawn area with the neighbor, why not invest in a large bed of foliage. Sharing a lot line with your neighbor can be tricky especially when one of you decides to sell your house. Instead, both of you could agree to plant shrubs on your own side of the property line and simply combine the area. Remember, water does not conform to property lines!

We're fortunate that we only have to turn on the faucet to get clean water. As individuals, we need to consider designing our lands to absorb and conserve more water. Benefits to designing to absorb stormwater are priceless. Slow flowing water means a reduction of sediment and trash in our waters as well as less energy required to treat our water.

Sources: 1. Sewer System History, City of Minneapolis Website, www.ci.minneapolis.mn.us, Accessed July 2009. 2. National Association of Home Builders. Housing Facts, Figures and Trends for March 2006. 3. Adopt-a-River Cleanup Review, Vol. 2, No. 2, 1993. 4. Massachusetts Low Impact Development Toolkit, www.mapc.org/lid, Accessed July 2009. 5. Sustainable Yard Series by the University of Minnesota Metropolitan Design Center, www.designcenter.umn.edu, Accessed July 2009.

RESOURCES

WATEROSITY
Exhibit at the University of Minnesota Arboretum
www.arboretum.umn.edu

COST-SHARE PROGRAMS
Rice Creek Watershed District, as well as many other local districts, will provide 50% of the total cost (up to \$5,000) to landowners who install water friendly features.
www.ricecreek.org/grants

METRO BLOOMS
www.metroblooms.org

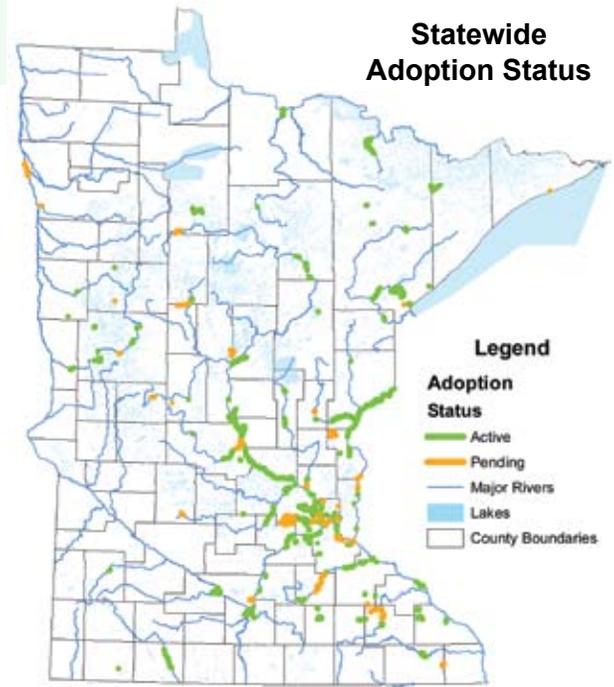
SUSTAINABLE YARD SERIES
Metropolitan Design Center
www.designcenter.umn.edu

VIRTUAL WATERSHED
www.mndnr.gov/adopriver/downloads.html

Adopt-a-River Update

# Groups (as of 7/24/09)	234 active
# Cleanups	2,796
# Pounds	5,366,750
# Miles	9,258
# Volunteers	78,418

(1989-2009)



The figure on the right shows how Adopt-a-River groups are in the Twin Cities metro area dominate. Water bodies in other regions of the state also need your attention. While vacationing this summer, let us know if you see an area that needs your help. Or consider adopting a location you visit once a year.

18th Annual Mississippi Riverboat Cleanup

With the threat of thunderstorms and cool weather, 141 volunteers arrived early on June 10th to help clean the Mississippi River. They boarded the Jonathan Padelford stern-wheeler riverboat to arrive at the banks opposite South St. Paul, just north of the Wakota (494) Bridge.

The event was hosted by Padelford Packet Boat Company, the DNR Adopt-a-River program and the Minnesota Conservation Corps (MCC). MCC served as crew leaders to oversee each volunteer group's efforts and helped with logistical support. Over 41 community sponsors donated food, water, door prizes and other services for the cleanup.

All in all, the volunteers removed 4,835 pounds of trash from the Mississippi River. This year, the cleanup area was larger and the trash more significant. At the end of the day, a dumpster on a barge provided by Upper River



Hard working volunteers pose with one of the trophy items, a 840 lb. tire.



Bags of trash collected by volunteers line the Mississippi riverbank.

Services was full of tires (approximately 16), and large items including: a 5' diameter construction tire (which weighed an amazing 840 lbs), a 1200 gallon barge flotation drum and a pontoon piece weighing over 200 lbs.

The cleanup dumpster was later scavenged by the 2009 State Fair Sculptor, Demian Jackman, who will be creating his masterpiece for display during the fair. Make sure to stop by to play our scavenger hunt game and see some of the pieces found in the Mississippi River.

If you would like to participate next year, email adoptariver.dnr@state.mn.us or call (651) 259-5620 to get on the communication list for the event.

Celebrating the Importance of Water

HISTORICAL MOMENT: February 21, 1969 in International Falls

Former Governor Elmer L. Andersen elected new president of Voyageur National Park Association

Paul E. Nordell, Coordinator, DNR Adopt-a-River

Background

The forests and waters along the Canadian border had long been celebrated as natural and cultural treasures. This region was the French voyageur's preferred route to the North American interior during the fur-trading days of the eighteenth and nineteenth centuries. Because of the area's significance, beginning in 1891, citizens looked for ways to shield this place from further development.

One of the key players in the late 20th century preservation efforts was Governor Elmer L. Andersen. In describing what was needed, he said, "People never lose when pursuing a worthy cause; there can be ups and downs, delays and frustrations, but persistence will eventually prevail." (Witzig, 2004).

The Battle for the Park

Elmer L. Andersen became president of the Voyageur National Park Association (VNPA) in 1969, just as legislation to establish the national park was about to be introduced in Congress. Previously in 1962, when Andersen was governor, he hosted a tour of the border country with the National Park Service, other state officials, and naturalist Sigurd Olson. Also included was a representative of Minnesota and Ontario Paper Company (selling to Boise Cascade in 1965). Following the tour, Governor Andersen, writing for the group, recognized the potential of the area as a national park.

Following Andersen's election as president of the VNPA on February 21, 1969, the battle for the park intensified. Although the VNPA had a number of very influential founders and early directors, there were still those with concerns about federal ownership. On March 3, for example, a letter to the editor of the *International Falls Journal* stated, "The people of Crane Lake still oppose the ... park on Kabetogama Peninsula and Crane Lake. We have given enough of our state away to the federal Superior National Forest. It all started in 1909, when airplanes were banned from Superior National Forest."

In a March 6th editorial in the *Journal*, the paper reaffirmed that they favored placing the park in the already federally owned national forest to the east. Voicing their concern, they referenced the insistence



of former U.S. Sec. of Agriculture Orville Freeman (former Minnesota governor) and former U.S. Sec. Steward Udall that the park was to be either on the "peninsula or not at all". They were hopeful that President Nixon's new interior secretary, Walter Hickel of Alaska, would help prevent the "hoarding" of our resources by the federal government. The editorial concluded by saying, "Perhaps now we can secure the park without damage to a major Minnesota industry, [and] with saving the taxpayers [money]."

Despite local concerns, by the end of the following year, on December 29, 1970, Congress sent the Voyageurs National Park bill to the President who signed it January 8, 1971. The park was formally established April 8, 1975. It included the controversial Kabetogama and Crane Lake areas. The battle over who controlled the waters, however, continued. In two separate federal cases after its establishment, the National Park Service was given jurisdiction over the extensive waters of Voyageurs National Park.

Today, the park is comprised of 134,000 acres of land and 84,000 acres of water including four major lakes, 26 interior lakes and over 500 islands. As visitors arrive at one of the park's four entry points (boat launches), most leave their cars behind and set out by water, much as the voyageurs did centuries ago.

Sources: *International Falls Journal* (2-21-1969 and 3-6-1969); Fred T. Witzig (2004), *Voyageurs National Park: The Battle to Create Minnesota's National Park*; *Rendezvous* (Spring 2009-Winter 2010, *Guide to Voyageurs National Park*).

Creature Feature

Shovelnose Sturgeon: *Scaphirhynchus platyrhynchus*

Eva Johnson, MCC Water Recreation Specialist

The shovelnose sturgeon belongs to the ancient fish family, Acipenseridae, which includes all sturgeon species. Two sturgeon species live in Minnesota, the lake sturgeon and the shovelnose sturgeon.

What's in a Name?

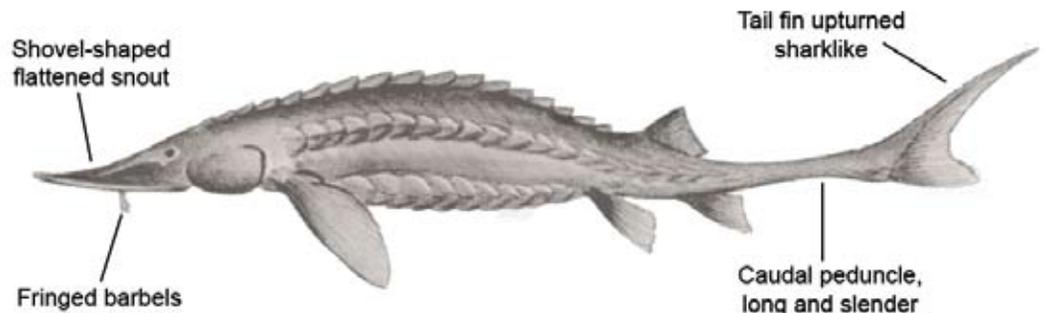
In Greek, *Scaphirhynchus* means “spade snout” and *platyrhynchus* translates to “broad snout”. It is also known as the Hackleback, Switch Tail or Sand Sturgeon.

Identification

Compared to the lake sturgeon which can weigh 400 lbs and grow 15 feet long, its smaller cousin, the shovelnose reaches only 5 pounds in Minnesota (Phillips, 1982) and grows to 3 feet long. The shovelnose has bony plates over its entire body and is long and slender. Its snout is flattened like a shovel. The fringed barbels (“whisker-like sensors”) are equally spaced in a row near its mouth.

Minnesota Habitat

In Minnesota, the shovelnose sturgeon is found in our Mississippi, Minnesota and St. Croix Rivers. Unlike its close relative, the lake sturgeon, the shovelnose prefers



Drawing by Harold (Rich) Stevenson & Glenn West

fast-moving water. It can be found swimming along the bottom of rivers using its mouth as a vacuum to suck up water insects. Only during spawning in the spring does the shovelnose come up to the water's surface. The shovelnose identifies the size and shape of its food by using its barbels along the river bottom.

Commercial Use

The flesh and eggs of the shovelnose sturgeon are harvested as a delicacy (mainly south of Minnesota). Its eggs can be sold as caviar for an expensive price.

Threats to Sturgeons

Large rivers, when dammed, pose a threat to the survival of the species, since the sturgeon are unable to reach their ancient spawning grounds (U.S. Fish and Wildlife, 2001). In general, sturgeon species are slow to reproduce which makes it difficult to recover their populations. The shovelnose reaches maturity between age 5 and 7. Sturgeons are also very sensitive to pollution in their waters.

Come visit the Adopt-a-River Minnesota State Fair booth to view the Shovelnose Sturgeon Found Objects Sculpture by artist Demian Jackman. The sculpture is constructed from debris found in Minnesota's waters.

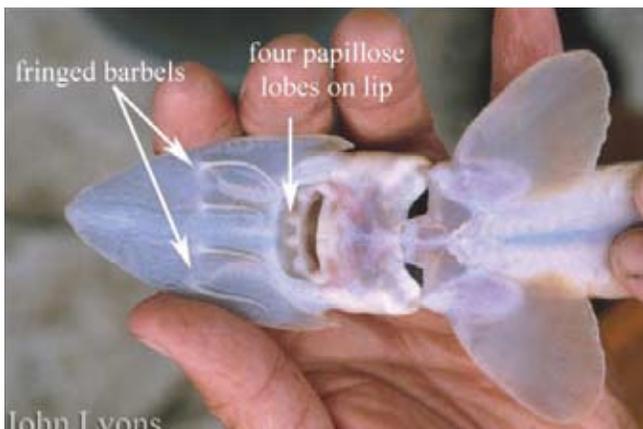
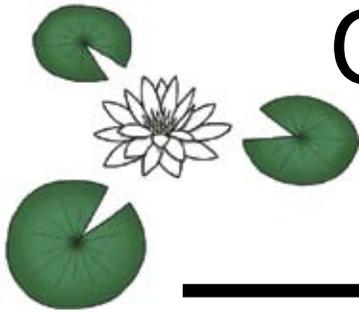


Photo by John Lyons
Wisconsin DNR/University of Wisconsin

Sources: 1. *Northern Fishes; with special ref. to the Upper Mississippi Valley* (Samuel Eddy, James Campbell Underhill, Univ Of Minnesota Press; 3rd edition (1974). 2. “Shovelnose Sturgeon”, U.S. Fish and Wildlife Service, Brochure, Revised May 16, 2001. 3. *Fishes of the Minnesota Region* by Gary L. Phillips, Univ. of Minnesota Press, 1982. 4. Wisconsin Fish Identification Database, www.wisfish.org, Univ. of Wisc. Center for Limnology, Wisc.DNR and Wisc. Sea Grant. Accessed July 2009. 5. *Shovelnose Sturgeon drawing, Montana Fish, Wildlife & Parks*, www.mt.gov.



On the Water

Adopt-a-River Volunteers Up Close

Featuring:

Rush Lake
Improvement Association

Spring Valley
Community Pride

Boulder Dam
Canoe Rental

According to our database, in 2008, 93% of shoreline cleanups were performed from April to October. This is logical since, as we all know, Minnesota's winters can be harsh. So who is doing cleanups in the winter?

A small but significant number of groups have been focusing on the ice, with cleanups immediately after the ice-fishing season.

The Rush Lake Improvement Association performed a cleanup this year on March 14 before the ice melted on East Rush Lake near Cambridge, Minnesota.

The group was motivated to clean the ice before the trash floated on shore or sank to the bottom of the lake. Volunteers used picks, rakes, shovels and axes to remove frozen-in rubbish. Debris such as cans, plastic bottles and items left by anglers littered the ice. The most common item found, however, was the plastic minnow bag.

The winter lake traffic and ice fishing season tend to leave certain unsavory items as bags of human waste. In addition, unclaimed ice-houses have been known to fall through the ice.

If you're ready to brave Minnesota winter weather, consider a cleanup on your lake after the ice-fishing season has finished. It's a great way to prevent shoreline trash before it drifts in.

Spring Valley Community Pride, a new adopt group, embarked on their first cleanup this May. They focused on two miles of the Spring Valley Creek in southeastern Minnesota.

Brad Musel, the event's coordinator, was instrumental in organizing community business sponsors, including a construction company that donated the use of its



Spring Valley Creek Cleanup Area



Spring Valley Community Pride's dumpster full of trash.



A cleanup volunteer with his prized trout.

dumpster for the cleanup.

Over 35 volunteers from a variety of age groups showed up to clean for 4 hours. The volunteers were able to remove over 10,000 pounds from the creek, including a solar panel, fencing, a dozen tires, windows and car seats. When the cleanup finished, the volunteers came back to discover that an anonymous donor had provided food and drinks for the entire group.

Another perfect ending to a perfect day occurred shortly afterwards when a young volunteer grabbed his fishing pole and caught a trout from the very creek he had worked so hard to clean!

Brad Musel said that he "has faith that the community will come together when needed to help out for a great cause".

Owners of the **Boulder Dam Canoe and Kayak Rental** in Oronoco, Minnesota performed their first cleanup this year on portions of the Zumbro River. Their cleanup was held the weekend of May 15- 17th. They

offered free canoe rentals to volunteers as well as a free dinner each night. During the weekend, over 200 volunteers showed up to help. After a hard day's work, canoes were bursting with trash.

After the effort found an old auto salvage yard, a local auto parts company volunteered to help remove 90,000 – 100,000 lbs. They used a front-end loader to pull the large items from the river. Oronoco Auto Parts also donated the cost of recycling 50 tires that were found.

For the cleanup organizers, Justin and Angie Bouwkamp, it was amazing to see what could be accomplished in 3 days with the help of a machine, chains and a lot of focused, grimy work from the volunteers.

Welcome New 2009 Adopt Groups!

*Battle Creek Middle School
 Boulder Dam Canoe Rental
 Bruce Family
 Caron Gibson
 Corporate Recognition
 Cub Scout Den 4
 Doug Armstrong
 Dr. Don & Joann Sipola
 DSGW Architects
 Ernst & Young Interns
 Friends of Crane Meadows
 Friends of the Sauk River (SCSU)
 Girl Scout Troop 4113
 Hometown Focus
 Humboldt Senior High School
 Jerry Zimmerman
 Joseph and Katherine Caulfield
 Kline-Cuppeletti Gun Club
 Laurentian Chamber of Commerce
 Menahga Conservation Club
 Natural Harvest Food Co-op
 Northern State Bank of Virginia
 Pam and Karry Kylo Family
 Rohman Group
 Roosevelt Elementary School
 Rush Lake Improvement Association
 Sean Haas
 South Metro River Rats - Weise/Groff Chapter
 Southside Residents
 Spring Valley Community Pride
 St. Francis G.R.E.E.N. Club
 TrekNorth Jr. & Sr. High
 Virginia Public Utilities
 Virginia Target
 Wild Ways to Garden*



New Email Address

Our email address has changed to:
adoptariver.dnr@state.mn.us

If you are having problems contacting us through email, please give us a call at (651) 259-5620.

New on the Website!

- Frequently asked questions.
www.mndnr.gov/adoptriver/faq.html
- Downloadable purple reporting card.
www.mndnr.gov/adoptriver/kit/reportcard08.pdf
- Trash weight estimation guide.
www.mndnr.gov/adoptriver/rubbish_weights.html

Send in your digital photos!

Have you taken digital photos at your events? If so, e-mail us your photos and they could appear in a future edition of the *Cleanup Review* or posted on the website! Send them to adoptariver.dnr@state.mn.us.

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 CR Editor.....Eva Johnson
 Adopt Coordinator.....Paul E. Nordell
 Dir., Parks and TrailsCourtland Nelson
 Technical AssistanceDave Lonetti
 Graphic ConsultantLinda Escher
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 Eva Johnson, 2009 Water Recreation Specialist.

Please direct your comments, questions, and suggestions to the editor of *Cleanup Review* at 651-259-5620 or to the Adopt-a-River Coordinator, Paul Nordell at 651-259-5630; FAX 651-297-5475; MN Toll Free: 1-888-646-6367; e-mail: adoptariver.dnr@state.mn.us; or write to: MN DNR, Parks and Trails Division, 500 Lafayette Road, St. Paul MN 55115-4052

Purple Cards

Thank you to all the groups that have sent in their purple cleanup report cards for their 2008 and 2009 cleanups. Also, please remember that if you have completed a cleanup and not reported it, SEND IN YOUR PURPLE CARD.

Results can also be emailed to adoptariver.dnr@state.mn.us or called in to 651-259-5620.

If you've lost your purple card, download one online at our website or call us to report your results. Coming soon is a way for you to report your results online!





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Natural Resources
Parks and Trails Division
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St. Paul, MN 55155-4052

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St. Paul, MN

If you have a change of address or no longer wish to receive the *Cleanup Review*, please let us know. Your consideration saves both our time and postage.



Printed on 30%
recycled paper.

August 27th - September 7th: Come visit the found object sculpture at the Adopt-a-River Booth, Minnesota State Fair Grounds.

Saturday, September 12th: Eagle Cliff Campground Root River Cleanup in Lanesboro. Volunteers will depart from Eagle Cliff Campground at 11 am. Canoes are provided free of charge for cleanup participants. In addition, there is an evening meal and prizes after the cleanup. Call (507) 467-2598 for information.

Saturday, September 19th: The Crow River Clean Up Day will be September 19, 2009. Diane Sander will help interested groups and citizens organize a clean up in their community. She will assist with organizing trash removal, lunch and refreshments. The clean up will run from 8 a.m. until Noon in communities across the Crow River Watershed. Contact Diane Sander for more information (763-682-1933 ext 3 or by email at Diane.Sander@mn.nacdn.net).

Saturday, September 19th: Cannon River Watershed Cleanup. Volunteers will clean from 9 a.m. to noon at sites throughout the watershed. There will be designated locations from Red Wing to Owatonna. For more information, contact Lisa Carey at lisa@crwp.net or at (507) 786-3911.

Saturday, October 3rd: Belle Plaine State Wayside Cleanup. Volunteers are needed to assist in a community-wide cleanup effort along the Minnesota River. The area is an old salvage yard with large metal items and over 10,000 tires remaining on site. It is a difficult site in the woods and there will be heavy lifting involved. Volunteers must be healthy and in good physical condition. Lunch will be provided for all volunteers at a city park after the cleanup. Volunteers are required to provide their own transportation to the site. To register for the cleanup event, please contact us at adoptariver.dnr@state.mn.us or by phone at (651) 259-5620 or (651) 259-5630.



By 2008 Big River Journey Art Contest
Winner Hue Cheng Yue



For a complete listing
of Adopt-a-River
cleanup events,
please visit our
website at:
[www.mndnr.gov/
adoptriver/events](http://www.mndnr.gov/adoptriver/events)