

RiverCurrents

The Voice of the St. Joseph River Watershed

December 2010

A Quarterly Publication of the
Friends of the St. Joe River Association, Inc.

About us

The Friends of the St. Joe River Association, Inc. (FotSJR) was established in April of 1994, and operates as a 501(c)(3) not-for-profit organization.

Mission

To unite a diverse group of stakeholders throughout the watershed in a collaborative effort to protect, restore and foster stewardship of the St. Joseph River Watershed.

Become a Friend

Join a group of stewards restoring and protecting this natural resource. We offer a variety of tax-deductible membership levels for both Personal and Business contributors.

Meetings

Monthly meetings of the Board of Directors and Watershed Council are usually held on the fourth Thursday of the month at the Three Rivers (Michigan) Public Library at 1:00 p.m. EDT. These meetings are open to the public. For more information and to verify dates and times, visit www.fotsjr.org.

Low Impact Development on Tribal Land

The Pokagon Edawat Housing Project

In 2004, the Pokagon Band of Potawatomi Indians embarked on an award-winning housing development project. According to tribal member and Environmental Coordinator Mark Parrish, the Band's vision was to create a sustainable residential community that would offer a high quality of life to its residents, be proactive in watershed management and provide a cultural spirit to the setting.

The Pokagon Band worked with landscape architects, planners and engineers to create a master plan for the 320-acre site that would become *Pokagonek Edawat*, meaning "Where Pokagon's Live." The specifications for the 12-acre housing community incorporated sustainable site infrastructure strategies including rain gardens, bioswales, flat-curbed streets, and pervious pavement to maximize stormwater absorption and infiltration on-site. Prairie and woodland restoration has also occurred on the site and the homes were designed and oriented to view the restored natural landscapes.

The Pokagon Band used Low Impact Development (LID) to arrive at an overall strategy that protects and uses natural flow pathways and preserves natural features in overall stormwater planning and design for the *Pokagonek Edawat Housing Development*, located in Dowagiac, Michigan. This development maximizes stormwater infiltration to ground water through the following methods:

Rain Gardens & Bioswales

Each home has at least one rain garden that accepts roof-top drainage. During the design process, the native topography of the site was retained as much as possible to preserve the natural drainage. Any stormwater runoff generated from the neighborhood is managed by the depressions where infiltration capacities have been augmented by native vegetation to create bioswales.

Natural Flow Path & Sensitive Area Preservation

The site was formerly agricultural fields mixed with woodlots. The woodlots and native topography of the site were retained as much as possible to preserve the natural drainage, and the

lots and streets were designed around these depressions. Land between these depressions that is not included as a lot will remain as open space.

Cluster Development

Clustering of homes and buildings reduced development costs by shortening roads and utility runs. Smaller lots have reduced lawn and yard maintenance. Clustering also allows for shared bioswales to be established among the buildings, helping to manage runoff. The footprints of the homes were minimized, while still resulting in more open space that can be preserved.

Porous Pavers

The street design for the first phase of the development is approximately 25,000 square feet of interlocking pavers for the primary driving surface. The streets three-foot depth subbase is composed of a bottom layer of road-grade gravel and crushed concrete overlain by coarse grained sand to help facilitate stormwater infiltration. The earth at the bottom of the subbase is graded with a slight slope toward the central bioswale to assist with drainage during very heavy precipitation events.

Additionally, the sidewalk is part of the roadway, and is designed to accommodate the weight of heavier emergency vehicles and allow passage in the presence of street traffic and parked vehicles. This approach also limits impermeable surfaces through the use of pavers and a narrower streetscape, encouraging slower traffic flow while promoting the walkability of the neighborhood. Curb and gutters were not used in the street design, since the permeable nature of the pavers and subbase made it unnecessary to collect and divert stormwater.

The Pokagon Band is pleased with the outcome and what it represents. The design and implementation of the *Pokagonek Edawat Housing Development* has received two awards: *HUD Best Practices and Innovation Award* in 2005 and *The Michigan Chapter of the American Society of Landscape Architects' Honor Award* in 2009. For more information visit <http://www.semcog.org/Data/lid.report.cfm?lid=176> or www.swmpc.org/pokagon_band.asp.

Three Numbers Changing the St. Joseph River Watershed: 3-1-9

In 2002, the Friends of the St. Joe River (FotSJR) was awarded an EPA Clean Water Act Section 319 grant. This grant helped to develop the St. Joseph River Watershed Management Plan (SJRWMP) for the entire 15-county bi-state watershed. Unprecedented, the WMP united stakeholders in both Michigan and Indiana in a concerted effort to address water quality issues and natural resource protection across jurisdictional boundaries. The SJRWMP continues to provide stakeholders and constituents with a plan that both facilitates and guides the implementation of measures to improve and protect water quality within the river system.

The 1987 amendments to the Clean Water Act (CWA) established the Section 319 Nonpoint Source Management Program. Section 319 makes grant money available for projects that attempt to reduce nonpoint source pollution from agriculture, forestry and urban land uses. Under Section 319, states, municipalities, tribes, Conservation Districts and other non-profit organizations are eligible to receive grant money supporting a wide variety of activities such as informational and educational programs, projects demonstrating innovative technologies and watershed-based approaches to solving water quality problems.

The program is managed differently in each state, but it has generally focused on specific projects or priority areas. As a response to President Clinton's *Clean Water Action Plan*, announced in 1998, 319 grants focus closely on watershed restoration projects and emphasize a watershed-based approach to nonpoint source management. This approach can include protection or restoration of wetlands and riparian areas to reduce nonpoint source pollution. Since 1990, the USEPA has awarded over \$3 billion to fund watershed implementation projects across the United States.

For detailed information on the creation of the St. Joseph River Watershed Management Plan, visit <http://www.stjoeriver.net/>. For information on 319 programs in Indiana visit <http://www.in.gov/ndem/nps/2524.htm>; in Michigan visit <http://www.michigan.gov/deq>.



Photo Courtesy Elkhart County Soil and Water Conservation District

The St. Joseph River Watershed faces a number of Nonpoint Source Pollution (NPS) issues including those caused by stormwater runoff occurring in both urban and rural settings. A 2008 report by the United States National Research Council identified urban runoff as a leading source of water quality problems. However, a variety of stormwater Best Management Practices (BMPs) can reduce the effects of urban and rural runoff. Many of the Conservation Districts within the St. Joseph River Watershed now offer cost-share incentive programs to help land owners reduce stormwater runoff and improve water quality.

Rain Garden & Rain Barrel Incentive Program

The Elkhart County Soil and Water Conservation District (SWCD) has found much success in helping Elkhart County land owners reduce stormwater runoff through its *Rain Garden & Rain Barrel Incentive Program*. For homeowners who qualify, the program can reimburse up to \$250 for rain garden plants, and up to \$50 per rain barrel (maximum two rain barrels per parcel). The program comes as a result of stakeholder input into the Greater Elkhart County Stormwater Partnership's stormwater fee. Stakeholder meetings held in

2009 found interest in providing incentives for homeowners rather than a credit or fee reduction for putting in BMP practices. This fee assists the Partnership in paying for public education and participation, regulation of construction site runoff, post-construction stormwater management on new development, illicit discharge detection and elimination, and pollution prevention in municipal operations.

The *Rain Garden & Rain Barrel Incentive Program* is open to anyone in Elkhart, Goshen, Bristol or unincorporated areas of Elkhart County. Program applications are available at the Elkhart County SWCD office or at www.stormwaterelkco.org. The program will be funded in 2011 for the second year, with funding given on a first-come, first-served basis while funds last.

In order to qualify for reimbursement, applicants must attend a workshop on the practice they wish to install. Rain barrel applicants who have been pre-approved and attended the workshop should submit receipts and a photo of the installed practice for reimbursement. Those wishing to install rain gardens have an extra step — a Partnership staff member must visit their site and approve their

Incentivizing Conservation

Cost-Share Programs Encourage Urban and Rural Stormwater Management

rain garden plans before they move ahead with installation. All funded practices must be maintained for five years. "Rain gardens and rain barrels have received a lot of attention recently," said Eric Kurtz, CPESC, Elkhart County SWCD Stormwater Coordinator. "We hope that this new program will help them become even more widespread in Elkhart County and throughout the Watershed."

Agricultural Water Enhancement Program

The Agricultural Water Enhancement Program (AWEP) is a voluntary conservation initiative that provides financial and technical assistance to agricultural producers to implement agricultural water enhancement activities on agricultural land for the purposes of conserving surface and ground water and improving water quality. The Kalamazoo, Black and St. Joseph River Watersheds are receiving targeted funding to support water conservation and water quality improvements on agricultural working lands. Two million dollars of AWEP funding was already awarded to these watershed areas in 2009. A portion of the \$27 million will be allocated each year for up to five years to help local agricultural producers offset the cost of adopting practices that protect water quality and quantity.

The Potawatomi Connection to the St. Joseph River Watershed

Native Americans inhabited the area of the St. Joseph River Watershed for many generations before contact with Europeans. The Neshnabék live mostly within the Great Lakes Watershed and speak a variation of the Algonquin language. In the Neshnabék tradition, rivers (Zibi) are believed to be the life blood of the Earth. The Potawatomi (Bodéwadmik) are one of the Neshnabék Tribes, and practiced a close relationship with their surroundings, particularly rivers and wetlands with their rich biological diversity. Wetlands provided a considerable amount of food and medicines to the Potawatomi. Mankind was considered only one component of the intricate web of life, and the other four legged and winged animals stand in equal importance to humans.

At the time of contact, the Potawatomi Indians occupied much of southern Michigan and northern Indiana, and were connected to the Odawa and Ojibwe Tribes through the Three Fires Council. Most Potawatomi settlements were located near bodies of water, and are central to the culture. Two Bands of the Potawatomi still exist in the St. Joseph River Watershed, the Nottawaseppi Huron Band and the Pokagon Band. The Nottawaseppi Huron Band settled land in Athens Township, Michigan over 150 years ago, and in 1995, after years of preparing formal documentation, were re-recognized by the United States government.

Pine Creek Watershed Restoration

The Nottawaseppi Huron Band is working to continue their tradition as ecological stewards by restoring and improving the health of the Pine Creek Watershed. Pine Creek is a tributary of Nottawa Creek and the St. Joseph River, flowing through the 120 acre Pine Creek Reservation, draining 49.7 square miles of primarily agricultural land in southern Michigan. Erosion, channelization, alterations in water flows, and invasive species

are all impacting Pine Creek and its extensive wetlands. A water resources program was initiated in 2010 that will monitor surface water quality in Pine Creek and several of its tributaries. The program will also allow the Tribe to more closely study wetlands and develop restoration strategies.

The Tribe utilized the Natural Resources Conservation Service's Wetland Reserve Program (WRP) on an 80-acre wetland complex within the Pine Creek Watershed. The WRP is a voluntary program offering financial and technical assistance to landowners who restore and protect wetlands on their property. The goal of the WRP is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. The program offers landowners an opportunity to be compensated for long-term protection of their wetland resources. Funding from the WRP and the Bureau of Indian Affairs assisted with the re-creation of a wetland pond and the establishment of 35 species of native plants in an old agricultural field. In addition to government partnerships, the Tribe works with organizations such as the Friends of the St. Joe River (FotSJR) to collaborate on watershed planning for both the larger watershed and the Pine Creek sub-watershed.

In 2009, a project was begun to restore wild river rice (*Zizania aquatica* var. *aquatica*), a state threatened species. This re-emerging cultural touchstone is not only energizing the community, but is also a favored wildlife food source. Wild rice was one of the main food staples of the Potawatomi Indians before European contact, and is threatened by changes to water quality and the spread of invasive species. For more information, contact Eric Kerney, Nottawaseppi Huron Band Water Resources Specialist, at eric.kerney@nhbpi.com.

Lower Water in St. Joseph River Exposes Abandoned Cars, Other Debris

Ten abandoned cars, tires, trash cans, a picnic table and a gumball machine: Those are just some examples of the debris crews recently pulled from the St. Joseph River after the Indiana Michigan Power Company lowered the water level so it could perform maintenance on the Twin Branch Hydroelectric Dam in Mishawaka, Indiana. The water level in the reservoir was lowered by five feet so the power company could repair the dam and replace water retention equipment. The repairs were completed in mid-October and the river has returned to normal operating levels.



Ash Road Bridge Overlooking St. Joseph River, Osceola, Indiana

Local officials said they spent significant time preparing for problems that might arise due to the river level dropping between the Twin Branch Dam and the Johnson Street Bridge in Elkhart. They did not, however, anticipate spending so much time extracting cars and other junk from the river. "It's kind of sad to see everything we're finding buried in the river," said Jen Tobey, Elkhart County's Emergency Management Director.

Help Keep the River Clean!

The St. Joseph River Watershed (SJRW) is vast, including 3,742 river miles and draining 4,685 square miles from 15 counties in Michigan and Indiana. The continued improvement and protection of the watershed depends upon the efforts of volunteers to help keep the watershed clean. The FotSJR encourages river cleanup initiatives throughout the year. Visit www.fotsjr.org/events for the current river clean up schedule. You can also make a tax-deductible donation to help further improve and protect the quality of the water and other natural resources we depend on. Visit www.fotsjr.org/JoinUs for more information.

Creature Feature

Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*)

"Massasauga" is the Indian word for "Great River-Mouth," which describes the location where the snake originally was found — in marshes along the great rivers of the Midwest. Today, the Eastern Massasauga Rattlesnake can be found in a variety of wetlands, wet prairies, and marshes, along rivers and lakes, and adjacent uplands throughout the Lower Michigan peninsula and across northern Indiana. During the late spring, these snakes move from their winter hibernation sites, such as crayfish chimneys and other small mammal burrows in swamps and marshlands, to hunt on the drier upland sites - likely in search of mice and voles. Females give birth to 8 to 20 young in late summer. Adult length is 2 to 3 feet. Although venomous, the Massasauga is shy and secretive. It often prefers to hide under shrubs, rocks, or brush, and retreats to a sheltered area if spotted in the open. Massasaugas are endangered over much of their habitat range due to wetland loss through drainage, filling and development.



Photo Courtesy Doug Scobel via Picasa Web Album © 2008

Conservation Status: Federal Candidate Species, Conservation Encouraged



Johnson Street Dam, Elkhart, Indiana

FlowFacts

The way a river responds to rainfall and snowmelt is an important indicator of watershed health. A stream rising slowly after a storm generally has a healthier watershed than one rising quickly. The USGS continuously monitors streamflow (or discharge) in the St. Joseph River Basin at 12 separate gauging stations. Real-time streamflow data from each gauging station is available through the USGS web site below.

FlowFacts from the USGS gauging station at Elkhart, Indiana.
Period of Record March 1903 to present:

- Drainage Area: 3,370 square miles (72% of SJRW)
- 2009 Peak Flow: 15,400 cfs (March 13)
- Maximum Flow on Record: 26,000 cfs (March 8, 1908)

FlowFactoid

26,000 cfs would fill Notre Dame Stadium in about 13 minutes!

Visit <http://waterwatch.usgs.gov> to find a gauging station nearest you and watch the **flow** of the Joe!

Low Impact Development

Low Impact Development (LID) is a sustainable stormwater management strategy. A concept that began in Prince George's County, Maryland in 1990, LID became an alternative to traditional stormwater Best Management Practices (BMPs) installed at new development projects. Officials found the traditional practices such as detention ponds and retention basins were not cost-effective and the results did not meet water quality goals. The LID design approach has received support from the U.S. Environmental Protection Agency (EPA) and is being promoted as a method to help meet goals of the Clean Water Act.

The increased use of LID is in response to the ballooning infrastructure costs of new development and redevelopment projects; more rigorous environmental regulations; concerns about the urban heat island effect; and the impacts of growth and development on natural resources. The frequency of droughts and concerns about water quality has also prompted interest in the treatment and the reuse of stormwater. Viewing stormwater as a viable resource has changed the approach to the elimination of runoff and the conservation of rainwater. Many municipalities across the nation have embraced LID due to its holistic approach and overall sustainable design.

Examples of LID include:

- Vegetated Swales
- Bioretention Basins
- Riparian Buffer Strips
- Green Roof Systems
- Wetlands
- Rain Gardens
- Pervious Paving
- Rain Barrels & Cisterns
- Native Landscapes



Do you know of a fantastic example of a LID project in the St. Joseph River Watershed? Let us know about it! Send your LID story to fotsjr.outreach@gmail.com.



P.O. Box 1794
South Bend, Indiana 46634
www.fotsjr.org

Support the Friends

The Friends of the St. Joe River are working with individuals and partner organizations to implement important restoration and protection projects throughout the watershed.

Pledge your support for our efforts by making a tax-deductible donation. Your support and generosity will help us improve and protect the quality of the water and other natural resources we depend on. Visit www.fotsjr.org for more information.