

Parks Announced as Gold Medal Finalist



Missouri State Parks has been recognized as one of the top park systems in the nation as a finalist for the 2013 National Gold Medal Awards. The award is presented by the American Academy for Park and Recreation Administration, in

partnership with the National Recreation and Park Association and Musco Lighting LLC.

The Gold Medal Awards program honors parks systems in the U.S. that demonstrate excellence in parks and recreation through long-range planning, resource management, volunteerism, environmental stewardship, program development, professional development and agency recognition. This year's winner will be announced live during NRPA's Annual Congress & Exposition in Houston, Texas, on Oct. 8-10.

Discharge Monitoring Report System Launched

The Missouri Department of Natural Resources has released a new online tool to help Missouri wastewater permit holders submit required discharge monitoring reports electronically.

The electronic discharge monitoring report, or eDMR, system will simplify the reporting process for Missouri's estimated 4,500 wastewater permit holders.

Some wastewater systems are required to submit discharge monitoring reports that summarize effluent monitoring results. The eDMR system allows wastewater treatment facilities to submit their reports via the internet, rather than through a paper recording and submission process.

The eDMR system will be faster and more efficient than the current system and will greatly reduce the amount of time and labor wastewater facilities spend preparing these reports. Additionally, eDMR will save the department time and improve accuracy by

eliminating potential errors that might be introduced by manual data entry.

The eDMR system is DNR's second major online initiative aimed at improving permitting time and efficiency. The ePermitting system, launched in June 2012, allows Missourians to apply for and receive land disturbance permits entirely online.

For more information, visit dnr.mo.gov/env/wpp/edmr.htm, or call the Department of Natural Resources' Water Protection Program at 800-361-4827 or 573-751-1300.

Online Permits Reach Milestone; Win Award

The Department of Natural Resources recently issued its 1,000th online land disturbance permit, a milestone for the program that represents years saved by applicants and department staff alike.



The ePermitting process, first rolled out in June 2012, allows applicants seeking a land disturbance permit – the most common of the permits issued by the department – to submit their application and receive the permit in a matter of minutes. In September 2013, the Environmental Council of the States selected the ePermitting program as one of three State Program Innovation Award winners for 2013. ECOS is a national non-profit association of state environmental agency leaders. Its purpose is to improve the capability of state agencies to protect and improve human health and the environment.

Building on the success of ePermitting, the department recently implemented eDNR, an online reporting program for wastewater plants that is much quicker and more accurate than the previous hard-copy reporting process.

"Our goal is to continue to use available technology to simplify the process for users and ease the demand on staff while still maintaining the same level of environmental oversight," Parker Pauley said.

Trail Project Receives Excellence Award

Missouri State Parks was recently recognized by the Society of Outdoor Recreation Professionals with a Project Excellence Award for their work on a trail inventory database and *Trails of Missouri State Parks* book. The awards are presented to recognize outstanding accomplishments in the field of outdoor recreation research, planning, management, and trails policy.

The project involved the creation of a comprehensive inventory to develop a trail database for Missouri State Parks containing information, images and up-to-date maps of every trail within the system.

The wealth of knowledge gathered through the inventory was then compiled into a beautifully illustrated, *Trails of Missouri State Parks*, which provides information on more than 230 trails in 47 state parks and historic sites. The award was presented during a ceremony on May 23 at the National Outdoor Recreation Conference in Michigan.

Earth Science Week 2013



"Mapping Our World," the theme of this year's Earth Science Week, will boost awareness about the many exciting uses of maps and mapping technologies in the geosciences. Each

year, the department's Missouri Geological Survey participates by sharing information with children and adults about how earth sciences play a fundamental role in the health, safety and welfare of all Missourians.

During the week, staff will recognize National Fossil Day Wednesday, Oct. 16; the Great Central U.S. Shake-Out, Thursday, Oct. 17; and Geologic Map Day Friday, Oct. 18, with special activities and exhibits.

Geologic Map Day is designed to promote awareness of geologic mapping and its vital importance to socie-

ty. Geologic Map Day focuses the attention of students, teachers and the general public on the study, use and significance of geologic maps for education, science, business, and a variety of public policy concerns. Special exhibits will be on display in the Edward L. Clark Museum of Missouri Geology, located at 111 Fairgrounds Road, Rolla. Plan to participate in Earth Science Week activities. To learn more, visit dnr.mo.gov/geology/education.htm#ESWeek.

Learn About Your Drinking Water



The Missouri Department of Natural Resources urges consumers to become more familiar with their local drinking water provider. The department has made it easier to do so by becoming the first in the nation to post Consumer Confidence Reports online for each public water supply.

Federal law requires public water supplies to provide Consumer Confidence Reports to customers by July 1 each year. These reports enable Missourians to make practical, knowledgeable decisions about their health and environment. The reports also provide suppliers with an opportunity to explain how the community's drinking water supplies are protected and build on their relationship with the water customer.

To assist utilities with this effort, DNR has made the reports available to consumers on its website at dnr.mo.gov/env/wpp/pdwb/ccr.htm. Missouri was the first state to take this initiative after the U.S. Environmental Protection Agency decided last year to allow water systems to post the reports online in lieu of mailing paper copies to customers.

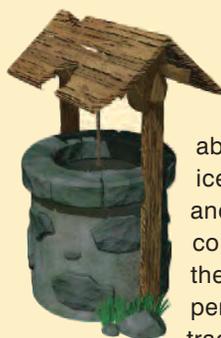
All community water systems are required to produce and distribute a Consumer Confidence Report. These systems include cities, water districts,

subdivisions, mobile home parks and other water systems serving at least 25 residents.

The department encourages the public to read their water system's Consumer Confidence Report and become better informed about their drinking water. Any citizen served by a community water system who has not received a Consumer Confidence Report should call their water provider and request a copy.

For more information, call the Department of Natural Resources at 800-361-4827 or 573-751-5331.

Well Permit Renewals Now Available Online



The department's Missouri Geological Survey is pleased to announce the availability of an online service in which well drilling and pump installation contractors may renew their permits. Online permitting allows contractors to renew and

print their permit and vehicle cards and pay associated fees immediately, for those contractors who have no outstanding violations against their existing permit.

The online permitting feature was added to the division's suite of online services, in addition to the Well Online Form Submittal (WOLFS) system, which was implemented by the division in fall 2012, and the Well Information search function implemented in spring 2013. WOLFS enables monitoring well contractors to submit monitoring well certification and registration forms and pay associated fees. This Web resource has proven to be significantly more efficient for staff and contractors. The search function is a resource for private citizens wanting to locate well or pump installation contractors who are permitted to do business in Missouri and search records for wells drilled after November 1987. The online form service is available at dnr.mo.gov/mowells.

Watershed Summits Held

Our Missouri Waters, the department's new vision for working with water resources at the watershed level, is continuing through its pilot phase. A watershed summit for the Spring River Watershed was held in Joplin at the end of May. More than 100 people participated, including many from the local community, as well as local, state and federal agency partners. The summit kicked off with a tour of the watershed that provided a visual perspective of the diverse characteristics of the Spring River basin, and recognized practices and projects that benefit the water resources and watershed community. The second and third days of the summit focused on information gathering and discussion around water resource topics in the Spring River watershed, such as stream water quality and watershed planning, wastewater and drinking water infrastructure, and long-term water supply and drought planning.

The other focus watersheds during the pilot phase are the Lower Grand in north-central Missouri and the Big River in the southeast. The department's regional watershed coordinators are already working with partners in these watersheds to share information and plan for gatherings similar to the Spring River summit. The date for the summit in the Lower Grand is Sept. 10, 2013, with the Big River summit slated for Oct. 9.

To learn more about Our Missouri Waters, the Spring River Water summit, and to sign up for updates, visit dnr.mo.gov/omwi.htm.

Focus Groups for Education

In a continued effort to serve Missouri communities and bring natural resource expertise to the general public and Missouri youth, the Department of Natural Resources currently is evaluating its education outreach efforts.





environmental notes

Bubble Bubble ... Toilet Trouble



A properly functioning wastewater treatment system is a necessity for keeping wastes flowing smoothly out of your sewer. In a rural state like Missouri, many homes lack access to centralized sewer systems and instead must opt for an on-site septic system. While time-tested and low-maintenance, these systems require attention to make sure they function properly.

The key areas involved in keeping a septic system healthy center around proper inspection, periodic pumping, proper waste disposal,

water efficiency and drain field care. In a septic system, wastewater flows from the home into a septic tank where it is held long enough that heavy solids, called sludge, are allowed to settle. Grease and lighter solids float to the top forming a layer called scum. The middle layer of wastewater then flows into a series of perforated underground pipes in a drain field where it is naturally cleaned and disinfected as it is reintroduced into the environment. On average, a septic tank should be pumped to remove excess solids and grease once every three years.

A system clogged with scum and sludge can cause wastewater to back up into the house or escape into the yard. For this reason it is good to be mindful of what you put down the drain. Toilets are not trash cans, so flushing large amounts of waste that does not break down in a septic system can cause problems down the line. Avoid putting things like cotton swabs, cigarette butts, coffee grounds and grease down the drain. In addition, items such as household or photographic chemicals and paint can wipe out beneficial bacteria that live in septic systems and are important for their proper function. These chemicals also can contaminate groundwater, find their way into local waterways and harm the environment, as well as clog the drain field, causing backups.

The more water a household conserves, the less enters a septic system for treatment. It is important to fix leaky faucets and toilets. Just one cup of leaking faucet water every ten minutes equals 36 gallons of water wasted in a day. In addition, the installation of high-efficiency toilets and showerheads, as well as faucet aerators, can significantly decrease water usage.

By heeding the tips above, a homeowner also can avoid costly repairs and the possibility of legal liability should the system fail. An unusable or malfunctioning septic system also can lower your property value. With proper care, a septic system can remain in operation almost indefinitely.

For more about septic systems, and tips for identifying a malfunction, visit the U.S. Environmental Protection Agency's SepticSmart website at water.epa.gov/infrastructure/septic/septicSMART.cfm.

Additional information about septic systems can be found on the Missouri Department of Health and Senior Services website at health.mo.gov/living/environment/onsite/index.php.

This past summer, the department hosted multiple statewide Education Focus Group meetings to determine what adult educators need to inform and educate our youth as it relates to preserving and protecting the state's natural and cultural resources. The department is focusing these meetings on K-12 youth through formal and informal education efforts.

The focus groups were well attended and offered valuable information that will provide direction to the department and help us serve Missourians in the best way possible.

For more information about the Department of Natural Resources' youth education efforts, visit dnr.mo.gov/education/index.html.

Grant for Geological Survey Program

The U.S. Geological Survey recently awarded a STATEMAP grant in the amount of \$134,667 to the department's Geological Survey Program.



The funds are to support advance detailed geologic mapping in the Jefferson City-Columbia area and large-scale compilation geologic mapping in the St. Louis area.

Since 1993, the Department of Natural Resources has actively participated in the USGS National Cooperative Geologic Mapping Program and has produced 107 bedrock and 99 surficial material geologic maps for locations across the state.

Geologists will coordinate supporting data from the Department of Geological Sciences and Engineering at the Missouri University of Science & Technology in Rolla.

Bedrock and surficial material geologic mapping in Missouri is needed to establish the geologic framework of areas determined to be vital to the economic, social and environmental well-being of the state. Learn more about the STATEMAP mapping program at dnr.mo.gov/geology.

Tipton Awarded Drinking Water Grant

The Missouri Department of Natural Resources has awarded a \$606,600

low-interest loan for the replacement of approximately 6,800 feet of drinking water distribution lines in Tipton. Funding for the loan comes from Mis-

souri's Drinking Water State Revolving Fund. The fund provides assistance for communities with drinking water infrastructure needs. A portion of the funding will be targeted toward green infrastructure, water and energy efficiency, and environmentally innovative projects.

This funding will help the city of Tipton protect its residents and the environment by making necessary drinking water improvements.

The department's Water Protection Program administers the loan funds and is committed to working closely with communities to support water and wastewater infrastructure improvement projects.

For more information, contact the department's Financial Assistance Center at 800-361-4827 or 573-751-1192, or visit dnr.mo.gov/env/wpp/srf.

Bunceton Awarded Wastewater Grant

The Missouri Department of Natural Resources has awarded a \$100,000 loan to the Cooper County city of Bunceton for installation of an ultraviolet disinfection system to eliminate bacteria from the wastewater treatment plant's water discharge. Ultraviolet disinfection destroys pathogens to prevent the spread of waterborne diseases to downstream users and the environment.

The loan will be financed through repayments of loans made from Water Pollution Control bonds. The department's Financial Assistance Center provides funding to assist communities with infrastructure needs for water quality, wastewater and drinking water.

A portion of the funding will be targeted toward green infrastructure, water and energy efficiency, and environmentally innovative projects implemented by the city of Bunceton.

The department's Water Protection Program will administer the loan funds. For more information, visit the Water Protection Financial Assistance Center online at dnr.mo.gov/env/wpp/srf.

Stream Team Notebook

Old Stream Team Finds New Passion

The Missouri Stream Team program started in 1989 and so did Stream Team 31, Ozark Fly Fishers. One of the oldest and largest Stream Teams, for many years they participated in stream cleanups and quietly removed trash from the river while fishing. However, a core group of members decided to become more involved with the program. In 2002, they attended a water quality monitoring workshop designed for anglers at Montauk State Park.

"That's when it all really started," stated Mike Swederska, former president of the club. "About eight or nine members went to the VWQM training and they started doing regular monitoring."

Adopting stream sites on the Current River, Mill Creek and Blue Springs Creek, these enthusiastic fishermen set about protecting their favorite resource. "One of the things we are proudest about is the fact that we were able to leverage matching funds to raise \$15,000 in less than 12 months to help purchase Bohigian Conservation Area and return it to public use," Swederska said.



DNR photo by Karen Westin

Explaining their motivation to continue their endeavors, Glenn Bish said, "For me it is all about protecting the environment and improving the streams that we love. We want those resources to be available for future generations to enjoy." Scott Darrough added, "I want to do the best I can to leave this world a better place than I found it, and hopefully someone will come along and continue the work when I am gone."

Other annual activities include participating in Operation Clean Stream, Bio Blitz and other environmental programs. This 300-member Stream Team and their three trained monitoring teams – captained by Glenn Bish, Scott Darrough and Bill Leslie – are definitely making a difference on their adopted streams. Let's hope they will continue to do so for another 24 years.



State Funding for Cameron Drinking Water Plant

More than \$1.1 million in financing for improvements to the city of Cameron's drinking water treatment plant has been awarded by DNR.

The city will receive a \$490,500 grant and a \$616,000 low interest loan, which will be used to convert the

plant's disinfection system from chlorine to chloramine.

Funding for the grant and loan comes from the Drinking Water State Revolving Fund. The fund provides financial assistance to communities with drinking water infrastructure needs. This funding will help the city protect residents and the environment

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 details that might be of interest to our
 readers.

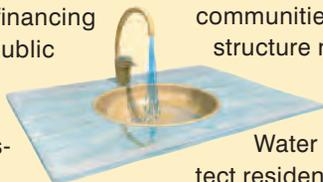
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by making necessary public drinking water improvements.

The department's Water Protection Program will administer the grant and loan funds. For more information, visit the department's Water Protection Financial Assistance Center online at dnr.mo.gov/env/wpp/srf.

Jefferson County Water Improvements

The Missouri Department of Natural Resources has awarded financing totaling \$1.73 million to Public Water Supply District No.12 of Jefferson County to improve its water distribution system.



District No.12 will use the funds – an \$866,000 grant and an \$866,000 low-interest loan – to replace water mains along U.S. Highway 61 from the water supply district office and out to Airport Road.

It also will construct a water main extension at the intersection of Interstate 55 and U.S. Highway 61. Funding for the loan comes from Missouri's Drinking Water State Revolving Fund.

The fund provides assistance for communities with drinking water infrastructure needs.

This funding will help Jefferson County Public Water Supply District No.12 protect residents and the environment by

making necessary drinking water system improvements.

The department's Water Protection Program will administer the funding.

For more information contact the department's Financial Assistance Center at 800-361-4827 or 573-751-1192 or visit dnr.mo.gov/env/wpp/srf.

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Resource Honor Roll Continental Coal Inc.

Continental Coal Inc. (CCI) of Kansas City recently received the Interstate Mining Compact Commission's (IMCC) Small Operator of the Year Award for surface coal mining. This award was given to CCI for their exemplary performance in mining and reclamation at the Cottonwood Creek Mine just north of Hume, Mo. in Bates County. Phil Tearney, president of the company, accepted the award at the commission's annual meeting in Cincinnati, Ohio on April 16, 2013.

The Interstate Mining Compact Commission is composed of 25 member and associate member states represented by their governors who serve as commissioners.

Kevin Mohammadi, director of the Department of Natural Resources' Land Reclamation Program, is the duly appointed representative of the governor.

"The IMCC is committed to recognizing the mining companies that are environmentally conscientious in their operation," said Mohammadi. "These companies take environmental protection seriously."

The mining and reclamation work at the Cottonwood Creek Mine was finished ahead of schedule and in a quality manner. The mining and reclamation is supported by highly effective design plans which resulted in enhancements for wildlife, agriculture and water resources. Steve Femmer of the department's Land Reclamation Program made the nomination for this award.

"The reclaimed land blends in very well with the neighboring farms and fixes some old problems from past mining," said Femmer. "That is a very positive result from good mining and reclamation practices."



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Rock Matters

Shale

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Shale is a very common form of sedimentary rock composed of clay, fine silt or mud that has been compacted into solid rock by burial beneath other sedimentary rocks. Shale generally is smooth to the touch and soft enough to be easily scratched or broken. Usually thin-bedded, layered or laminated, and tends to break along parallel bedding planes, shales come in a variety of colors. Some are gray, green and red, while others are dark brown and black. Often between the layers are animal burrows and fossils of both marine creatures such as brachiopods and land plants such as lepidodendrons.

People sometimes confuse shale with slate, a much harder rock. In manufacturing, shale is used as a filler material for Portland cement – a basic ingredient of concrete, mortar and stucco – and brick, tile and ceramics, to name a few uses.

Black shale is commonly associated with coal beds in northern and western Missouri. Under certain geologic conditions, oil and gas accumulate in what is known as "oil shale" and can yield oil and gas from the burial and thermal alteration of shale or mudstone. However, tremendous energy is needed to extract these compounds, making this rock more appealing in regions where other sources of oil have been exhausted. Although Missouri has tremendous amounts of thinly bedded black shales in the Forest City Basin, located in northwest Missouri, none of these rock

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units are currently producing oil or gas. Read about oil and gas in Missouri at dnr.mo.gov/geology/docs/gcsummer7.pdf.

The most recent U.S. Geological Survey report identifies the 10 leading shale and clay (USGS combines shale and clay statistics) producing states, in decreasing order of tonnage, as Georgia, Wyoming, Alabama, Texas, North Carolina, Missouri, California, Ohio, South Carolina and Mississippi. Learn more about shale and other common Missouri rocks and minerals at dnr.mo.gov/geology/docs/rocksetbooklet.pdf.