

Hazardous Cleanup Site Information Now Online

Missourians now can get details on hazardous substance cleanup sites anywhere in Missouri – from across the state to across the street – thanks to a new, web-based, interactive map developed by the Missouri Department of Natural Resources.

“Missouri residents have a right to know what’s happening at cleanup sites in their communities,” said Department of Natural Resources Director Sara Parker Pauley. “This mapping system puts those important details right at their fingertips.”

The map, known as the Missouri Hazardous Substance Site Locator, allows users to search for information about cleanup sites within a specific community or area. This map includes site details such as contaminants, future property use restrictions and links to important documents. Download-

able data layers also are available. The map can be found online at dnr.mo.gov/molts/gov/.

Osage Beach Student Wins Slogan Contest

An Osage Beach student’s suggestion to “go with the flow” won top honors in the Missouri Department of Natural Resources’ Earth Day 2014 Slogan Contest.



Mallory Bartels, a fifth-grader at Camdenton R-3 Capstone Gifted Center, submitted the slogan, “Watersheds: Go with the flow, clean H₂O,” based on DNR’s 2014 Earth Day theme, “Watersheds.”

Bartels will be honored on stage at Earth Day 2014, which will be held Friday, April 25th, on the south lawn of the Capitol in Jefferson City.

She also will receive a \$50 gift card

donated by Central Bank of Jefferson City. DNR received nearly 250 entries.

Earth Day 2014 is the 20th annual Earth Day event sponsored by the Department of Natural Resources. Between 1,000 and 2,000 students are expected to attend the event, which will include educational activities, contests and stage shows. For more information visit the Earth Day website at dnr.mo.gov/earthday/.

Urban Hazards Mapping

The Missouri Geological Survey (MGS), a division of the Missouri Department of Natural Resources, recently completed mapping of the geologic limitations and environmental vulnerability of the Poplar Bluff area. The map, produced at a 1:250,000 scale, identifies areas as potentially suited, or not suited, for the development of short- or long-term debris storage or solid waste disposal.

Time Exposures

At the end of World War I, farming remained a labor-intensive process with many harvesting operations still carried out using horses. While not a new technological advancement, threshers made it easier to separate the grain and chaff and eliminated much of the tedious and time-consuming manual labor involved in the harvest. Before threshing machines, grain was separated by hand using flails. Many farmers pooled resources by purchasing such machinery together and shared the equipment and labor involved in its operation.

This photo of a threshing machine and crew was taken between 1915 and 1920 on rented farmland south of Canton. The young man driving the wagon is Stanley B. Hoffman. Stanley’s father, George Hoffman, a German immigrant, is standing to his immediate left. The thresher was owned by a group of farmers who moved it from farm to farm and shared the work of each harvest.

George Hoffman’s family still lives in Canton on Century Farm, which was established in 1909.

Send your photo to “Time Exposures,” c/o Missouri Resources, PO Box 176, Jefferson City, MO 65102-0176. Original photos will be returned via insured mail. Pre-1980 environmental and natural resource photos from Missouri will be considered. Please try to include the date and location of the picture, a brief description and any related historic details that might be of interest to our readers.

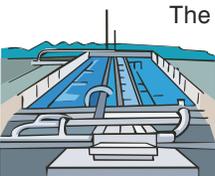


Photo courtesy of Hoffman family

Funded by the State Emergency Management Agency, this map gives local community planners and early responders the simple tools to make informed and timely decisions in the face of geologic hazards or other natural disasters, such as an earthquake or tornado, by identifying the geological suitability for development of short-term debris storage or long-term solid waste disposal.

Geologic limitations and environmental vulnerability were assessed by determining locations of faulting, shallow groundwater, groundwater aquifers, alluvial sediments, karst, solution-weathered bedrock and losing streams. MGS also developed a detailed GIS geodatabase for these geologic features in the Poplar Bluff area. During 2014, MGS is continuing this effort in the Farmington and Cape Girardeau areas. Maps are available at missourigeologystore.com.

Funding for Wastewater Engineering Assistance



The Missouri Department of Natural Resources is now accepting applications from communities with

planning or design assistance needs for wastewater treatment and collection facilities.

The department's Small Community Engineering Assistance Grant Program is offering the grants to communities serving populations of less than 10,000. The goal of the program is to help small communities obtain wastewater engineering services necessary to plan and design wastewater treatment and collection facilities.

Funding from the Small Community Engineering Assistance Grant Program may be used to cover the costs of engineering services, environmental investigations or services incurred in preparation of a facility plan. Applications are prioritized based on when they are received, as well as on the project's environmental impact.

Eligible communities may be se-

Stream Team Notes

25 Days of Stream Team



McDonald County High School, Stream Team #1351

So, what can citizens who are passionate about Missouri's streams accomplish in 25 years? How about stenciling more than 17,000 storm drains, conducting over 25,000 water quality monitoring trips, planting over 250,000 trees, or picking up more than 20 million pounds of trash? That is exactly what the volunteer members of Missouri Stream Team have accomplished since the program's inception in 1989. We think that's worth a celebration!

Join us for "25 Days of Stream Team" with more than 25 special events happening all over the Show-Me State from March through October. We'll be highlighting the people and activities that have made Missouri Stream Team such a success over the past 25 years and give all Missourians the chance to participate in celebrating this unique Missouri treasure. Check out the "25 Days of Stream Team" calendar on the Stream Team website at mostreamteam.org/ and join in the fun. We'll see you on the river!

Missouri Stream Team is sponsored by the Missouri departments of Natural Resources and Conservation, and the Conservation Federation of Missouri.



lected to receive up to \$50,000. Applications will be accepted at any time, or until funds are depleted. Additional information is available from the department's Water Protection Program at dnr.mo.gov/env/wpp/.

330 Acres Acquired Near Current River State Park

In November 2013, Missouri State Parks announced that the state has acquired 330 acres of property in Shannon County. The property, historically referred to as Camp Zoe, is located adjacent to Current River State Park and downstream from Montauk State Park. It also abuts the 64,000-acre Roger Pryor Pioneer Backcountry, which is managed by Missouri State Parks.

"This Ozark gem showcases beautiful natural resources, including Sink-

ing Creek near its confluence with the Current River," said Bill Bryan, director of Missouri State Parks. "Its location near Current River State Park and minutes away from the beloved Montauk State Park will provide visitors great opportunities to enhance their Missouri State Parks experience in the Ozarks," Bryan added.

Plans for development of the property and future use are in the preliminary stages.

For news releases on the Web, visit dnr.mo.gov/newsrel.

For a complete listing of the department's upcoming meetings, hearings and events, visit the department's online calendar at dnr.mo.gov/calendar/search.do.

Looking for a job in natural resources? Go to dnr.mo.gov/hr.

Rock Matters



Chert

Chert is sedimentary rock composed of silicon dioxide (SiO₂). It is a granular microcrystalline form of quartz that is harder than glass, brittle, and breaks with a smooth, rounded or clam-like (conchoidal) fracture with sharp edges.

(Left) Rounded balls of chert are often referred to as cannonball chert. Cannonball chert forms inside of soft sedimentary rocks which later weather away.

(Bottom) Chert is a good material for arrowheads and other pointed tools, like this arrowhead knapped by MGS geologist Pat Mulvany Ph.D. Chert forms a sharp edge when chipped.

DNR photos by Hylan Beydler.

Chert colors may range from buff, green, gray or blue to red, pink, yellow, brown or black. A banded mixture of several colors also is very common. Because it is highly resistant to weathering, chert is the chief constituent of natural stream gravels in Missouri. The loose rock fragments blanketing hillsides in many parts of the state, particularly in the Ozarks, are mostly made of chert.

Chert is a rock of many names and disguises. Few people other than geologists actually call it chert, which is generally applied to the stone when its color is white, tan or light gray. Red, brown, reddish-brown and yellowish-brown varieties are called jasper. Black and dark gray specimens are known as flint. Mottled and pink types are called Mozarkite, while some banded varieties have found a home in the agate family.

Staff geologists field numerous inquiries from citizens who believe they have found dinosaur or other bones, which in fact are chert specimens.

Gravel operations often excavate chert from Ozark streams and crush it for use as an aggregate in road construction. For Native Americans, it was the stone's hardness and the way it broke that made it invaluable.

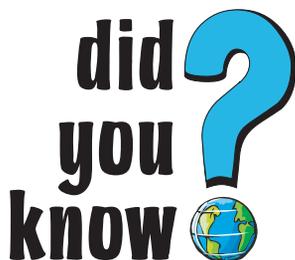


They used chert to make arrowheads and scraping and cutting tools because it breaks with a curved or shell-like fracture, leaving edges as sharp as broken glass. Artifact collectors generally call the stone flint.

Because chert is a very hard material that produces a spark when it is struck against steel, 17th-century-era long-barreled muskets used varieties of natural flint for their strikers. Modern-day Americans who make flaked stone tools like arrowheads and spear points are known as flint knappers.

The department's Missouri Geological Survey proudly displays an impressive collection of Native American stone artifacts at the survey's offices in Rolla. The more than 200-piece collection includes spear, dart and arrow points, knives, scrapers, drills and adzes. The artifacts are displayed in an archeological manner that chronicles man's dependence on industrial minerals. Industrial minerals are the nonmetallic, mined commodities that promote development and sustainment of civilization. This extraordinary collection was donated in 2002 by Estell Darwin Halmich of Bourbon, Mo.

Each year, hundreds of school children and adults are treated to this fascinating arrowhead display. In addition to this collection, numerous other instructive exhibits of rocks, minerals, fossils and maps are on display at the Edward L. Clark Museum of Geology, also in Rolla at 111 Fairgrounds Road. Learn more about chert at dnr.mo.gov/pubs/pub661.pdf.



Consumer Electronics Make Up 1 to 2 Percent of Municipal Solid Waste

Did you know that consumer electronics make up approximately 1 to 2 percent of the municipal solid waste stream? Televisions, video equipment, computers, audio equipment and mobile phones may not only contain components that are hazardous to the environment, but they often require scarce materials and large amounts of energy to produce. In 2009, 215 million units of computers, televisions and mobile devices were ready for end-of-life management. Of these, only 38 percent of com-

puters, 17 percent of televisions, and 11.7 percent of mobile phones were collected for recycling, according to a U.S. Environmental Protection Agency report. If just mobile phones were recycled, 35 thousand pounds of copper, 772 pounds of silver, 75 pounds of gold, and 33 pounds of palladium could be recovered for every million devices that passed through the recovery process. In addition, many electronics contain recoverable rare earth elements that are used for semiconductors and other components contained in the devices.



Recycling your electronics is not an impossible undertaking. Many electronics retailers have take-back programs for old items. In addition, many city, county and solid waste management districts host collection events for old devices, as well as events hosted by Missouri's e-cycle program. For more information on how and where to recycle your old electronics, visit the department's e-cycle website at dnr.mo.gov/ecyclemo.